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BEL MARIN KEYS UNIT IV - IGNACIO INDUSTRIAL PARK UNIT 3, MARIN --ETC(U)
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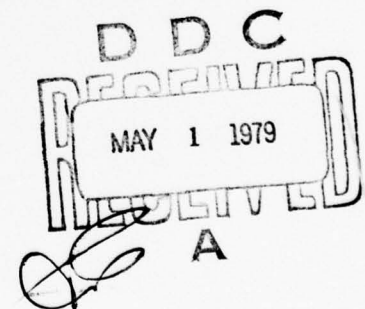
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FINAL
ENVIRONMENTAL STATEMENT

BEL MARIN KEYS UNIT IV - IGNACIO INDUSTRIAL PARK UNIT 3
MARIN COUNTY, CALIFORNIA

REGULATORY PERMIT APPLICATION
BY
JACK WEST AND SOILAND AND ASSOCIATES
PUBLIC NOTICE 9617-33
PUBLIC NOTICE 10906-33

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U.S. ARMY ENGINEER DISTRICT, SAN FRANCISCO, CALIFORNIA
APRIL 1979

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle)	5. TYPE OF REPORT & PERIOD COVERED	
6. BEL MARIN KEYS UNIT IV-IGNACIO INDUSTRIAL PARK UNIT 3, MARIN COUNTY, CALIFORNIA		Final Environmental Statement
7. AUTHOR(s)	8. CONTRACT OR GRANT NUMBER(s)	
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Army Corps of Engineers, San Francisco District 211 Main Street San Francisco, CA 94105		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Office of the Chief of Engineers U.S. Department of the Army Washington, DC 20314		12. REPORT DATE April 1979
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18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Light-Industrial Development Residential Development <i>This report covers the</i>		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Excavating and filling of an approximate 99-acre area for proposed lagoons, adjacent lots, and streets and to construct individual boat-docking facilities for each of the single-family detached residences as part of the development of Bel Marin Keys Unit IV. Excavating and filling an approximate 40-acre area for development of an industrial/commercial complex as part of the development of Ignacio Industrial Park Unit 3 is also covered in the report.		

SUMMARY

BEL MARIN KEYS UNIT IV - IGNACIO INDUSTRIAL PARK UNIT 3
MARIN COUNTY, CALIFORNIA

REGULATORY PERMIT APPLICATION BY
JACK WEST AND SOILAND AND ASSOCIATES
PUBLIC NOTICE 9617-33
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() DRAFT ENVIRONMENTAL STATEMENT (X) FINAL ENVIRONMENTAL STATEMENT

Responsible Office: District Engineer
U.S. Army Engineer District, San Francisco
211 Main Street
San Francisco, CA 94105
(415) 556-3660

1. Name of Action: (X) Administrative () Legislative
2. Description of Action: Excavating and filling an approximate 99-acre area for proposed lagoons, adjacent lots, and streets and to construct individual boat docking facilities for each of the single-family detached residences as part of the development of Bel Marin Keys Unit IV. Excavating and filling an approximate 40-acre area for development of an industrial/commercial complex as part of the development of Ignacio Industrial Park Unit 3.
3. a. Environmental Impacts: Change in land use from open space to urban area; reduction of levee-impounded agricultural land, grassland, and marshland; increase in vehicular traffic; changes in air and water quality; change in noise levels; and water runoff alteration.

 b. Adverse Environmental Effects: Loss of grassland and marshland; air, water, and noise pollution; disruption of drainage patterns; and increased local traffic.
4. Alternatives: Permit denial; lower-density housing; project relocation; and partial development.
5. Comments Received:

 Advisory Council on Historic Preservation
 U.S. Department of Health, Education, and Welfare
 U.S. Department of the Interior
 U.S. Department of Transportation
 Federal Aviation Administration
 Federal Highway Administration

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U.S. Environmental Protection Agency
California Department of Parks and Recreation
California State Lands Division
The Resources Agency of California
Bay Area Air Pollution Control District
Regional Airport Planning Committee

6. Draft Statement to CEQ: 11 February 1977.
Final Statement to EPA: 10 APR 1979.

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1	SITE LOCATION
2	PROJECT SITES
3	ADJACENT SITES

APPENDICES*

<u>Appendix</u>	<u>Title</u>
A	MISCELLANEOUS SUPPORTING DOCUMENTS
B	ENVIRONMENTAL IMPACT REPORT (BEL MARIN KEYS UNIT IV)
C	ENVIRONMENTAL IMPACT REPORT (IGNACIO INDUSTRIAL PARK UNIT 3)
D	LETTERS OF COMMENT

* Appendices B and C were distributed with the Draft Environmental Statement and therefore are not included with this final report. Additional sets of these appendices are available from the San Francisco District upon request.

ERRATA SHEET

FINAL
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MARIN COUNTY, CALIFORNIA
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PUBLIC NOTICE 10906-33

<u>Page</u>	<u>Paragraph</u>	<u>Addition or Correction</u>
30	4.16	Clarification is required concerning the flood hazard potential. Executive Order 11988 discourages development in flood plain areas. The areas to be occupied by the Bel Marin Keys and the Ignacio Industrial Park developments are currently subject to flooding and will continue to be so until the grading for both projects is complete. At that time, neither site will be dike-dependent (see paragraphs 1.10 and 1.12, page 3) for flood protection, since final minimum elevations after a period of 30 years of settlement as predicted by soils engineering studies would be +7.0 feet above mean sea level for the street gutters, +8.0 for the garage slabs, and +9.0 for the finished floors. Drainage inlet grades would be at +7.0, while storm drainage and ponding facilities would be such that water would not reach the level of the finished floors during a storm having a probability of occurrence of once every one hundred years with six inches of rainfall in one 24-hour period. However, if the storm occurred simultaneously with an extreme high tide condition, minor street flooding would result as the one-hundred-year flood elevation is +7.0. These grading requirements are contained in Marin County Ordinance No. 2245 (see Document A-16, Appendix A). Also, it should be mentioned that the Corps Novato Creek flood control project is still under study and it is not known at this time if it would be a factor that would affect either project's design.
30	4.18-4.20	Gonzales and Oberkamper, Civil Engineers, Inc., performed a hydrologic analysis for both projects, which indicated that the incremental volume of runoff attributed to the two projects would be less than 0.5 percent of the total runoff of the 5,200-acre watershed area. The quality of the runoff from the Unit 3 site is discussed in paragraph 9.16, page 53. The runoff from the Unit IV site would be similar. In addition, there is a Drainage Agreement between Marin

<u>Page</u>	<u>Paragraph</u>	<u>Addition or Correction</u>
		County and Soiland and Associates which would influence runoff from the Unit 3 development. A similar agreement is being developed between Marin County and Jack West for the Unit IV development.
43-45	6.01-6.13	<p>Clarification is required concerning the filling of wetlands and the alternatives to this which are available. Current Department of the Army Regulations (33 CFR 320.4) strongly discourage unnecessary work in wetland areas. The 99-acre Bel Marin Keys site contains approximately 11 acres of seasonal wetland, the remainder being farmland, for which compensation is currently being negotiated (see paragraph 1.28, page 6). The 45-acre Ignacio Industrial Park site contains approximately 32 acres of seasonal wetland, the loss of which has been compensated by the donation of 119 acres of adjacent seasonal wetland to the Marin County Flood Control and Water Conservation District as permanent open space and wildlife habitat (see paragraph 1.29, page 6). These seasonal wetlands are important to migratory birds as feeding and resting areas, but not as nesting grounds. The proximity of these areas to existing light-industrial and residential development and the disturbed condition (sporadically-placed fill and rubble) of both areas has lowered their value to wildlife, especially when compared to other less-disturbed areas in the Novato Creek flood plain and along San Pablo Bay to the east. Alternative sites that would be available elsewhere in the Novato area would involve similar topography as well as the presence of seasonal wetlands; consequently, the impacts would be similar or possibly more significant, especially if the alternative sites involved less-disturbed seasonal wetlands. Upland sites, due to the lack of suitable level ground necessary for light-industrial development (office and warehouse space) as proposed for Ignacio Industrial Park and the lack of a water body for water-oriented single-family residential development as proposed for Bel Marin Keys, were considered economically and practically unfeasible. Alternatives to the projects are discussed on pages 43-45. Alternatives available to the Corps are to either grant or deny the permits or to condition the permits. The conditions must be enforceable and must be agreed to by the applicant. Neither project is considered water-dependent, although the Bel Marin Keys site development is based upon the residents having access to the lagoon system, a factor in the location of the Unit IV site.</p>

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PUBLIC NOTICE 9617-33
PUBLIC NOTICE 10906-33

1.00. PROJECT DESCRIPTION

1.01. Proposed Project.* Jack West, Novato, California, has applied for a Department of the Army permit to excavate approximately 1,000,000 cubic yards of material and to fill an approximate 99-acre area for proposed lagoons, adjacent lots, and streets, as well as to construct individual boat docking facilities for each of the proposed single-family detached residences as part of the development of Bel Marin Keys Unit IV, near Novato Creek, Marin County, California.

1.02. Soiland and Associates, Novato, California, has applied for a Department of the Army permit to excavate approximately 455,000 cubic yards of material and to fill an approximate 40-acre area for development of an industrial/commercial area located along San Jose Creek, near Novato Creek, Marin County, California. Approximately 32 acres are under Corps jurisdiction.

1.03. Both applicants are applying through their agent, Gonzalez and Oberkamper, Civil Engineers, Inc., San Rafael, California. The two applications are being considered together under one environmental statement for two specific reasons: similar (but not necessarily the same) environmental impacts and similar cumulative impacts. The letters of application can be found as Documents A-1 and A-2 in Appendix A.

1.04. Applied Science and Resource Planning, Inc., Marin County, California, prepared a document for Jack West titled "Bel Marin Keys Unit IV Environmental Impact Report." Madrone Associates, Environmental Consultants, San Rafael, California, prepared a document for Soiland and Associates titled "Ignacio Industrial Park Unit 3 Final Environmental Impact Report." This Final Environmental Statement will refer to the Applied Science and Resource Planning document as Appendix B and to the Madrone Associates document as Appendix C.

*In the following paragraphs of this statement "project site" will refer to either Unit IV of Bel Marin Keys or Unit 3 of Ignacio Industrial Park, while "project area" will refer to either the entire Bel Marin Keys development or the entire Ignacio Industrial Park development or both.

1.05. The Bel Marin Keys project site is located south of Bel Marin Keys Boulevard, adjacent to Units I, II, and III, just beyond the corporate limit of the City of Novato. Hamilton Air Force Base's runway is approximately one-half mile to the southeast, and the U.S. Route 101/State Route 37 interchange is one mile to the northwest. The Ignacio Industrial Park project site is located to the west of the Bel Marin Keys project, south of Bel Marin Keys Boulevard, on San Jose Creek which is connected to Novato Creek by a tide gate after flowing through drainage ditches to the north. See Plates 1 and 2 for the location of the two proposed projects.

1.06. Authority. The Army's authority over these lands is based upon Section 10 of the Rivers and Harbors Act of 1899 (RHA), 33 U.S.C. Section 403. As explained in Public Notices 71-22 and 71-22(a), dated 11 June 1971 and 18 January 1972 respectively, all work undertaken in navigable waters below the plane of the mean of higher high waters (MHHW), including all new work in unfilled portions of diked areas formerly below MHHW, requires a permit from the Secretary of the Army acting through the Chief of Engineers. The Army's authority over these lands is also based on Section 404 of the Federal Water Pollution Control Act of 1972 (FWPCA), Public Law 92-500, 33 U.S.C. Section 1344, which requires a Department of the Army permit for the disposal of fill material within the navigable waters of the United States.

1.07. In response to the provisions of the National Environmental Policy Act (NEPA), Public Law 91-190, 42 U.S.C. Section 4321 et seq., an evaluation of the impacts of a proposed activity on all aspects of the quality of the human environment is required prior to a permit application being considered for approval. This environmental statement addresses such an evaluation of the Bel Marin Keys Unit IV - Ignacio Industrial Park Unit 3 projects. An evaluation of the entire Bel Marin Keys project area is also addressed due to plans for eventually developing the land out to San Pablo Bay by Jack West, which will enlarge the impacts discussed in this statement.

1.08. Additional Regulatory Requirements. The San Francisco Bay Conservation and Development Commission (BCDC) does not claim jurisdiction over either project areas; therefore no BCDC permit is required for the proposed activities. However, any work within 100 feet of the line of highest tidal action of the Bay would require a BCDC permit. Both applicants have applied to the Regional Water Quality Control Board for certification. The Bay Area Air Pollution Control District (BAAPCD) exercises regulatory authority over the Bel Marin Keys - Ignacio Industrial Park projects. The California State Lands Commission claims jurisdiction over the Ignacio Industrial Park site, requiring a permit for any dredging on the site. No jurisdiction over the Bel Marin Keys site is claimed (see Document A-17, Appendix A).

1.09. The County of Marin has general-purpose government jurisdiction over the project areas; however, the Ignacio Industrial Park area will be annexed to the City of Novato upon completion of development under an agreement with the Local Agency Formation Commission.

1.10. The Marin County Flood Control and Water Conservation District has jurisdiction over development of the proposed projects with respect to drainage and flood control. The District is an agency of the State of California, governed by the Marin County Board of Supervisors, which acts as the District's Board of Directors and which supervises flood control activities in the seven flood control zones located in Marin County. The two projects are located in Zone #1, which involves most of the Novato Creek drainage system, including San Jose Creek.

1.11. Other agencies with jurisdictional or permit-granting authority are the North Marin County Water District, Marin County Airport Land Use Commission (ALUC), and Marin County Sanitary District #6. ALUC has jurisdiction due to the proximity of the two projects to Hamilton Air Force Base's runway and clear zone.

Project History.

1.12. Bel Marin Keys. The Bel Marin Keys area is located within what was previously known as the Marin Meadow Ranch. This property was diked off from the Bay by 1897, with the area containing Unit 4 having been diked off by 1887. The property was farmed until 1961, at which time Mr. West acquired the property and began planning the Bel Marin Keys development. Construction of houses began in late 1961 after excavation of the lagoons had been completed. After completion of Unit I, the construction of Units II and III began in the mid-sixties, with the area between Bel Marin Keys Boulevard and Novato Creek becoming developed. New construction began south of the boulevard in the late sixties and has continued until the present time. Unit IV would be a continuation of the development of Bel Marin Keys.

1.13. Ignacio Industrial Park. Ignacio Industrial Park was formerly part of Rancho San Jose, which was used for cattle grazing. The property was divided up into parcels to be sold around 1946. Dairy operations began then and continued through 1960. In 1969 Soiland and Associates purchased 260 acres and did a study on the property, which resulted in the formulation of the M-3 Ignacio Industrial Park Master Plan, adopted by the Marin County Board of Supervisors in 1970. The Master Plan included the acreage for Units 1, 2, and 3, as well as the ponding area.

1.14. Units 1 and 2 were then sold to California Land and Construction Company (CLC Marin, Inc.), who have since developed both parcels. Unit 3 is the last parcel left to be developed in Ignacio Industrial Park. Figure 5, Appendix C provides a series of maps and an itemized history of the project area.

Project Details.

1.15. Bel Marin Keys. Unit IV will cover approximately 99 acres, of which approximately 48 acres will be developed for residential use. The residential development will consist of 158 single-family detached houses.

1.16. Approximately 51 acres will be dry excavated to create a series of lagoons, which will be connected to the existing lagoons by culverts. The excavated soil will then be used to create pads for the proposed building sites and for access to them. Two existing streets will be extended, and a new street will be constructed to intersect with Bel Marin Keys Boulevard. Approximately five acres will be used as miniparks, including an island in the middle of the largest proposed lagoon. Refer to Figure 3, Appendix B for the overall scheme, as well as Document A-16, Appendix A which contains Marin County Ordinance No. 2245.

1.17. Ignacio Industrial Park. Unit 3 development is based on an amendment by the applicant to the 1970 M-3 Master Plan for Ignacio Industrial Park that would permit commercial and industrial uses on approximately 40 acres of land. Unit 3 is one portion of a 59-acre property adjacent to the existing Unit 1 and already-approved Unit 2. Fill for Unit 3 would be excavated from the remaining 119-acre portion of the site, which would become a public flood-ponding and wildlife area. Refer to Figures 1 and 2, Appendix C for the overall scheme. See Document A-9, Appendix A for the current M-3 Master Plan. The amendment to the Master Plan has been approved by the Marin County Board of Supervisors (Oberkamper, 1976).

1.18. Under the M-3 Master Plan amendment, Unit 3 will be developed as an industrial park on land ranging in elevation from zero to six feet above mean sea level (MSL). Filling will raise the elevation to approximately 8.5 feet above MSL. Grading, development of streets, and emplacement of utilities will follow the filling operation. The site will be divided into 87 lots of approximately 5,000 square feet each.

1.19. As a result of excavation, changes will occur in the 119-acre flood pond and wildlife area. These changes include the removal of a six-acre knoll at the north end of the site, excavation of the area to two feet below MSL, creation of an island or islands for wildlife, and creation of a one-acre site for parking at the north end of the area. The one-acre site could be used as a vista point, depending on what Marin County decides as to its use.

Future Site Development.

1.20. Bel Marin Keys. Development of the remainder of the 1,138-acre area will follow a residential-recreational concept, similar to the existing Units 1, 2, and 3. The creation of keys would be continued with a variety of residential uses, and deep-water access would be provided to the expanded system of lagoons (totaling 531 acres), as part of

the development which would eventually reach San Pablo Bay. When the property is developed, approximately 950 acres would be returned to tidal action. An overall master plan for all the property has been proposed, but not approved. See Figure 3A, page 2a, Appendix B for a conceptual layout of future development.

1.21. Ignacio Industrial Park. Unit 3 is the last parcel of the property between Bel Marin Keys Boulevard and the West property to be developed.

1.22. Compatibility and Inter-Relationship of the Project with Existing or Proposed Corps or Other Agency Projects. In addition to the Bel Marin Keys Unit IV - Ignacio Industrial Park Unit 3 permit applications, the Corps of Engineers has evaluated several other projects in the vicinity. See Plate 3 for the locations of projects adjacent to Ignacio Industrial Park Unit 3.

1.23. CLC Marin, Inc. has placed fill on seven acres northwest of Ignacio Industrial Park Unit 3, near Novato Creek, in preparation for developing a 36-acre industrial park identified as Ignacio Industrial Park Unit 2 as explained in Public Notice 10447-33. The seven-acre fill area is the only part of the project site within the Corps jurisdiction. Preparation of the site would consist of filling and grading the entire site to an elevation of 12.7 feet above mean lower low water (MLLW). Approximately 115,000 cubic yards of material would be imported from an upland site for the seven-acre fill. See Document A-5, Appendix A for details.

1.24. Soiland and Associates was granted a permit to excavate and fill on a 51-acre site, south of Ignacio Industrial Park Unit 3, near Novato Creek in preparation for developing a 26-acre industrial park identified as Bel Marin Commerce Park Unit 2 as explained in Public Notice 74-208-147. Only 2.2 acres are within the Corps jurisdiction. The project includes excavating a pond of approximately 25 acres which would serve to hold storm runoff waters and using the 140,000 cubic yards of material generated by the excavation to fill and elevate the remaining 26 acres. See Document A-6, Appendix A for details.

1.25. The Bel Marin Keys Townhouse Association has received a permit to retain an existing 247-foot dock, twelve 24-foot finger docks, a 10-foot ramp and a 10-foot pad, and to construct 20 additional fingers from the dock, located at the south end of the lagoon between Montego Key and Caribe Isle near Bel Marin Keys Boulevard, adjacent to Novato Creek, as explained in Public Notice 9518-33. See Document A-7, Appendix A for details.

1.26. The Bel Marin Keys Community Services District has been given a general permit for boat docks and piers in the Bel Marin Keys lagoons as explained in Public Notice 10136-33. The purpose is to provide boating access and facilities for the residents of the Bel Marin Keys development, including Unit IV. See Document A-8, Appendix A for details.

1.27. The Corps of Engineers had proposed a Novato Creek flood control project. Anticipated improvements included channelization, diversions, underground conduit, a trail system, a picnic area, a boat ramp, parking, and restrooms. Some of the creek would have remained in its natural state. The proposed project would have been designed to reduce flooding problems in the 4,000-5,000-acre Novato Creek flood plain, in which Bel Marin Keys and Ignacio Industrial Park are located. The Corps now considers the project economically unjustified; consideration is being given to terminating the study.

Fish and Wildlife Mitigation Proposals.

1.28. Bel Marin Keys. Compensation measures by the applicant include the provision for shallow areas around the lagoon islands to allow the reestablishment of vegetation as well as the creation of the islands themselves for wildlife habitat. The California State Department of Fish and Game has suggested that the applicant could also compensate for the effects on wildfowl and migratory birds by dedicating another portion of the applicant's property to them, who would then instigate marsh restoration by removing dikes. The Department of Fish and Game has also suggested that a portion of a proposed golf course be devoted to an upland or marshland wildlife area (see page 20, Appendix B). Public access to the lagoons and San Pablo Bay should be maintained as an intrinsic part of any mitigation proposal. The recently created San Pablo Bay State Wildlife Area lies immediately to the east of the Bel Marin Keys property, affording the opportunity for public access to the Bay. A mitigation plan is currently being developed between the applicant and the above agencies.

1.29. Ignacio Industrial Park. A 119-acre parcel of land has been donated to the Marin County Flood Control and Water Conservation District for flood control and wildlife habitat as compensation. The parcel adjoins the project site to the east and northeast as indicated on Plate 3.

1.30. Agency Acceptance. Final wildlife habitat compensation plans are being formulated for the Bel Marin Keys project between the applicant, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game. Compensation for the Ignacio Industrial Park project is acceptable to the above two agencies.

2.00. ENVIRONMENTAL SETTING WITHOUT THE PROJECT

2.01. Regional Setting. Bel Marin Keys and Ignacio Industrial Park are located in the Novato Creek flood plain near San Pablo Bay. Both project sites are on the south side of Novato Creek, with State Route 37 approximately one-half mile to the north, San Pablo Bay to the east, Hamilton Air Force Base approximately one mile to the south, and U.S. Route 101 a short distance to the west. Nearby cities include Novato and San Rafael, the two primary urban areas in northern Marin County, which are to the northeast and south, respectively, of the subject area. See Figure 4, Appendix C for an aerial view of the area.

2.02. Vegetation and Wildlife. The project area is within a low flat coastal plain. Prior to 1897, when levees were built around the area, extensive marshlands and mudflats occupied the site. Much of the area has been farmed for approximately 75 years and is presently used for growing hay and oats, with grasslands and herbaceous vegetation occupying those areas not farmed. Much of the area is seasonal wetland, holding ponded rainwater during approximately half of the year except when pumped dry for agricultural purposes. The area is considered valuable to wildlife as both feeding grounds and nesting areas, with the manmade lagoons on the site, Novato Creek, and San Pablo Bay providing fresh- and salt-water habitat in the area. The area serves as a buffer between the marshes of San Pablo Bay and development to the west.

2.03. Bel Marin Keys. Several different biotic communities are represented at the project site. The variety of habitat present allows the area to support a diverse array of wildlife.

2.04. The lagoons, Novato Creek, and San Pablo Bay provide both fresh- and salt-water aquatic habitat. Aquatic habitat supports such benthic organisms as crustaceans and worms, which constitute food sources for a variety of fish and birds. Fish, such as striped bass and sturgeon, and birds, such as ducks, geese, and pheasants, that are present in the project area vicinity, provide fishing and hunting opportunities. Recent installation of floodgates and a lock at the Novato Creek and lagoon system interface has introduced a physical impediment to aquatic wildlife utilizing both areas and has also altered the effects of tidal action.

2.05. Most of the project area consisted of bay mudflats prior to the construction of levees and drainage ditches. Mudflats remaining in the vicinity are found just on the bay side of the levee forming Bel Marin Keys' eastern boundary. Mudflat biota consists principally of lower organisms, such as bacteria, fungi, algae, and zooplankton. These, in turn, serve as important food sources for higher organisms and as decomposers.

2.06. Marshy areas are found along portions of the Novato Creek channel and the bay shoreline, as well as at a few locations in surrounding lowlands. These fresh- and salt-water marshes are extremely productive ecosystems in terms of food and oxygen. Numerous species of ducks, geese, and other aquatic and shore birds feed on marsh plants, while decomposing marsh plants comprise a valuable food source for zooplankton, as well as for shrimp, clams, and other detritus feeders. Tidal action distributes these marsh products throughout the bay.

2.07. A majority of the project site and vicinity is characterized by grasslands and other herbaceous vegetation and is devoted to the production of certified seed and hay. The continuing agricultural use of parts of undeveloped Bel Marin Keys lands provides habitat for various species of field wildlife, including a number of small mammals and seed- and insect-eating birds. Despite substantial seasonal variation in habitat availability caused by farming activities, these agricultural lands are considered to be valuable to wildlife as both feeding grounds and resting areas. These fields also serve as a buffer between marshes and existing development.

2.08. Ignacio Industrial Park. The project site consists of 59 acres of low, open marshy and upland fields with a small channel meandering through the area to the north side of the property where it crosses under Bel Marin Keys Boulevard, eventually draining into Novato Creek. The channel receives fresh-water flows from both Pacheco and San Jose Creeks. During the winter the overflow from the two creeks covers much of the project site, including areas 1, 3, and 4, and the 43-acre ponding area as shown in Figure 15, Appendix C.

2.09. Area 1-marshy area. This area includes approximately 26 acres of the site. A large part of the area is wet and contains fresh-water marsh plants such as water plantain, water parsley, rushes, and sedges. Where the soil is drier, plants include brass buttons, thistle, salt grass, and annual grasses, and there are numerous patches of willows and Oregon ash. One group of large willows, in particular, forms a sharp contrast to the flat surrounding area and provides a haven for wildlife. An abundance of birdlife is found at the site, including the snowy egret and California quail. Mammals utilizing the area include moles, raccoons, rabbits, weasels, skunks, and deer.

2.10. Area 2-grassy knoll. A 6-acre grassy knoll adjacent to the northern boundary of Unit 3 rises to an elevation of 22 feet and contains several large valley oaks. Owls, turkey vultures, and hawks use the tall trees on the knoll for roosting. Mammals utilizing this area include ground squirrels, rabbits, and voles.

2.11. Area 3-flat, disturbed area. This area consists of approximately 90 acres of the site. The area has been disturbed by grading activities, haul roads, and mosquito abatement procedures which involved disking. Vegetation consists primarily of large patches of annual grasses, fat hen, and brass buttons. Parts of the area are good habitat for rodents where elevations are above winter flood levels, providing food for hawks, owls, herons, and egrets which hunt in the area. Mammals include raccoon, rabbit, fox, and deer.

2.12. Area 4-salt marsh and sloughs. There is a salt marsh habitat located along Bel Marin Keys Boulevard near the northwest corner of the site and along the existing slough. During the summer water in the northern portion of the slough is stagnant and the remainder of the slough is dry. Outlining its course are salt-tolerant plants such as pickleweed, fat hen, alkali heath and salt grass. The flow of water from Pacheco Creek and San Jose Creek is fresh, and the dam at the junction of Novato Creek prevents tidal water from reaching the site. The source of salt water appears to be two-fold. First, the tide gates are known to have malfunctioned prior to 1970, permitting tidal water to flow onto the site; second, the area was once an extensive tidal marsh and the soil apparently still retains some salt. The slough is well populated with heron, egret, duck, and coot, and raccoons also use this area.

2.13. Endangered and threatened species. The Endangered Species Act of 1973, Public Law 93-205, 16 U.S.C. Sec. 1531 *et seq.*, provides for the conservation of endangered and threatened species of fish, wildlife, and plants. No endangered or threatened plant species have been encountered on either project site. Endangered or threatened wildlife species that may be present in the vicinity include the salt marsh harvest mouse, California black rail, California clapper rail, and California brown pelican. Since the California black rail, salt marsh harvest mouse, and California clapper rail are restricted to salt marshes, it is unlikely that they would be found at either project site although they may be found in adjacent marshes. The brown pelican occasionally passes through the general area, and may utilize both properties for resting in rare instances.

2.14. Geologic Setting. The Bel Marin Keys and Ignacio Industrial Park sites are located adjacent to each other and, as such, are included in similar geological environments. The area in which the sites are located is within the North Coast Range geomorphic province of California. This province is characterized by a series of essentially parallel northwest-trending ridges and valleys which developed as a result of crustal warping. Major geologic structures such as fault zones, fold axes, and geological units also have a northwesterly alignment. This part of the Coast Range is underlain at depth by a thick

sequence of metamorphosed marine sedimentary rocks comprising the Jurassic-Cretaceous age Franciscan formation, which are the oldest rock types underlying the area. Franciscan rocks are exposed at various locations around the city of Novato. These rocks consist predominantly of graywackes, shales, and altered mafic volcanic rocks. The Franciscan formation is overlain locally by a sequence of continental and marine sedimentary rocks of the Jurassic-Cretaceous Great Valley series. In the Novato area this sequence is comprised of interbedded sandstones, shales, and conglomerates. The sedimentary rocks are exposed west and northeast of the project sites and appear to be in fault contact with the older Franciscan formation.

2.15. The youngest sedimentary deposits occurring in the area are found on the flat bay plains in the southeastern part of the Novato area. These deposits are former marshlands which consist of relatively soft, unconsolidated silty sands, clays, and peats locally known as younger Bay Mud. The Bay Muds within the general area occupy the flood plain of Novato Creek and other adjacent natural drainage systems. Recent surficial deposits consist of stream sediments and man-made fills.

2.16. Major structural features include the San Andreas fault zone to the southwest, the Hayward fault zone along the western base of the Berkeley Hills, the Calaveras fault zone along the east side of the Berkeley Hills, and the Rodgers Creek fault zone on the west flank of the Sonoma Mountains.

2.17. Site geology. The Bel Marin Keys Unit IV and the Ignacio Industrial Park Unit 3 sites are underlain by Quaternary bay and marshland deposits and alluvium, all of which overlie Franciscan rocks located at varying depths. Locally, these rocks, as well as geologic structures, are concealed by a thick sequence of alluvial sediments, which are of both marine and continental origin. A large portion of the overlying sediments are derived from nearby hills and valleys. Classification of samples from test borings as well as interpretation of geophysical data indicate that the soft Bay Muds in the vicinity of the projects are comprised of a thin, moderately firm upper crust underlain by up to 60 feet of relatively soft, unconsolidated, saturated silty clays and sands containing organic material (Goldman, 1969). These sediments increase in thickness to the northeast toward San Pablo Bay.

2.18. The regional geology, as well as the seismic refraction data obtained for the materials underlying the Unit IV site, (Rice, 1973) indicate that the soft Bay Mud in the area may be underlain by unconsolidated older stream channel deposits which, in turn, overlie bedrock. Precise data of the locations and extent of the stream channel deposits is not known; however, the bedrock is part of the Franciscan formation of rocks which are exposed south and northeast of the sites.

2.19. Seismicity. The San Francisco Bay Area is located in a seismically active region. The seismic activity is well-documented historically and occurs as individual sudden movements on faults, resulting in earthquakes, and also as fault creep. Three major fault zones are located within the Bay Area. These are: the San Andreas Fault west of San Francisco Bay, the Hayward Fault at the western base of the Berkeley Hills, and the Calaveras Fault along the east side of the Berkeley Hills. All are active and are considered a part of the San Andreas fault system. The sites lie within this fault system with the San Andreas Fault located about 14 miles to the southwest and the Hayward and Calaveras faults located approximately 10 and 35 miles to the southeast respectively. Other faults in the region that are considered to have been active during the past one million years include the Mt. Burdell Fault, whose mapped location is shown slightly to the northeast of the project sites, and the Tolay and Rogers Creek faults about 6 and 7.5 miles to the northeast, respectively. In addition to the major active faults of the San Andreas system, the Healdsburg Fault, located 30 miles to the north of the site, has generated damaging earthquakes during historic time.

2.20. The nearest known faults to the sites are those within the geologically young Mt. Burdell fault zone, occurring just northeast of Bel Marin Keys Unit IV. This zone constitutes the faulted contact between relatively young volcanic rocks and the relatively old rocks of the Franciscan and the Novato Conglomerate formations. The only seismic indication of possible fault activity along the Mt. Burdell fault zone during recent time is the alignment of a few minor (less than magnitude 3) earthquake epicenters during the last 40 years (Rice, 1973). However, this fault also has considerable geologic field evidence of younger sediment displacements, suggesting that it is an active fault. The traces of the individual faults within this zone can be readily located in some of the upland areas north of Novato, although extensions of these faults through the bay plains and marshlands can only be projected from the upland areas (Rice, 1973). The geophysical investigation completed as a part of a study of the Bel Marin Keys Unit IV site did not indicate that any of these fault traces passed through the site. Two other faults have been mapped near the site, and the inferred locations show the Novato Valley and Indian Valley faults as being near or under the northeast side of the Bel Marin Keys Unit IV site and slightly southwest of the Ignacio Industrial Part Unit 3 site, respectively. However, the location of these faults is not conclusively known as both are covered with alluvium. Neither fault is considered to have been active during the last one million years.

2.21. Other than the 8.3 Richter magnitude earthquake of 1906, whose epicenter was about 15 miles to the southwest, the nearest epicenter with a magnitude greater than 4.0 is located about 15 miles to the southeast. The strongest seismic intensity experienced in the vicinity of the sites was during the 1906 San Andreas event.

2.22. Abundant evidence from many great earthquakes throughout the world has shown that damage to buildings and utilities tends to be considerably greater where they are located in deep, loose, compressible deposits such as soft bay mud, than where they are on hard bedrock sites (Rice, 1973).

2.23. Liquefaction. Liquefaction potential is generally highest in partially-saturated or saturated cohesionless, fine-grained soils. The results of a geotechnical study of the Ignacio Industrial Park Unit 3 site by Cooper-Clark and Associates indicate that the underlying sandy soils are sufficiently dense or contain enough fine-grained binder soils to minimize liquefaction potential. Because the sequence of "soft Bay Mud" beneath the Bel Marin Keys Unit IV site typically consists of interbedded peats, clays, silts, and sands in various stages of saturation, the liquefaction potential is not as great as might be expected. The soils boring data on adjacent sites confirms the great variability of the subsurface material.

2.24. Tsunamis. Tsunamis are sea waves generated principally by seismic disturbances. Historically, the tsunamis that have reached the California coast have originated in areas around the Pacific such as Chile, Japan, the Aleutians, and Alaska and were caused by earthquakes in or near the ocean. California earthquakes have not generated any recorded tsunamis. The most recent tsunamis to strike the northern California coast occurred in 1960 and 1964 when tsunamis were generated by earthquakes with epicenters in Chile and Alaska, respectively.

2.25. A recent study (Department of the Army, 1975) indicates that a 100-year tsunami would have a runup in San Pablo Bay, adjacent to the two project areas, of 3.7 feet (mean sea level datum). A 500-year tsunami would have an estimated runup of 5.1 feet.

2.26. Mineral resources. No significant mineral resources are located within the limits of the sites.

2.27. Hydrology. From a regional viewpoint, Bel Marin Keys and Ignacio Industrial Park are within the Novato Creek drainage basin, which covers approximately 44 square miles in northeast Marin County and is drained by Novato Creek which borders the project site on the north.

2.28. Numerous damage-producing floods have occurred in the basin within recent history. Since 1900 it has been estimated that 25 flood-producing storms have occurred in the area (Department of the Army, 1967). Occasionally, every 2-3 years, storm tides top the San Pablo Bay dike and inundate 50-100 acres of the project area.

2.29. Natural surface waters near the project area include Novato Creek to the north, San Pablo Bay to the east and San Jose Creek to the south. Most of the area is seasonal wetland, holding ponded rainwater during approximately half of the year except when pumped dry. Man-made surface waters include 12-foot deep ditches that criss-cross the project area for drainage, lagoons with attendant dwellings, and ponds to provide flood-water storage.

2.30. Ground water is drawn down some four to eight feet below the existing ground surface by pumps. The series of drainage ditches lead to the pumps which discharge water into San Pablo Bay via tide gates during flood conditions.

2.31. Locally, the project area is influenced by drainage from the 5,200 acre San Jose Creek/Pacheco Creek watershed. This watershed generally contains residential development in the areas where there is a gentle land slope (0 to 20%+) with the heavily-wooded steeper hillsides undeveloped. The applicant has calculated that the 100-year storm runoff for a 24-hour period from the watershed would be 1,250 to 1,400 acre-feet.

2.32. Water from San Jose and Pacheco Creeks presently flows into the existing Pond 2, then along the existing slough, and then drains into Novato Creek via tide gates under Bel Marin Keys Boulevard.

2.33. Overflows from heavy winter storms flood the area proposed for Ignacio Industrial Park Unit 3 as well as the lands in the 76-acre parcel to the northeast which are below +3 or +4 MSL elevation.

2.34. Water Quality. Soil salinity, agricultural and urban drainage, and sea water are the predominant factors influencing water quality in the area.

2.35. An analysis of the water on the Unit IV site was not undertaken. The water would probably be of poor quality with high salinity, high total dissolved solids, high biological oxygen demand, high nitrate levels, and low dissolved oxygen. Sizable quantities of residual pesticides might also be expected.

2.36. An analysis of the water on the Unit 3 site was not undertaken. During the summer water in the northern portion of the slough is stagnant and has a considerable amount of dead algae. Water in the slough is from adjacent agricultural drainage and from the runoff of San Jose and Pacheco Creeks, which run through urban areas for parts of their course.

2.37. Climate and Air Quality. The climate of the San Francisco Bay Area is moderated by proximity to the Pacific Ocean. The project area is characterized by a mild climate, with the annual temperature range between the warmest month (July) and the coldest month (January) being approximately 20°F. Annual precipitation is about 26 inches, with a dry summer season. Tables 2 and 3 and page 14, Appendix B summarize the climatic conditions in the project area.

2.38. In order to realize significant, long-term controls over air pollution problems, it is necessary to evaluate an individual project's impact on a region-wide scale and in terms of cumulative effects. The Clean Air Act Amendments of 1970 require that all States submit an Implementation Plan to the U.S. Environmental Protection Agency (EPA), explaining control strategy which will be used to attain and maintain ambient Air Quality Standards. These Implementation Plans are the vehicles for drawing together a region's air quality planning efforts. Elements of the Plan must provide for land-use and transportation controls, source monitoring, air quality monitoring, and a procedure for review, prior to construction, of the location of new sources of air pollution.

2.39. In a revision to the State of California Implementation Plan the State Air Resources Board recommended to EPA that the San Francisco Bay Area be designated as an Air Quality Maintenance Area (AQMP) for particulate matter, oxidants, and sulfur dioxide. For each area designated as an AQMP, a detailed analysis of the area's future air quality will be performed. If this detailed analysis confirms that a national standard will not be maintained through 1985 or attained by 1980, a long-term maintenance plan will be developed. EPA and other air quality-oriented agencies will review the air quality impact of the subject activities in light of these plans.

2.40. Bel Marin Keys. The site proposed for Bel Marin Keys Unit IV is currently not developed and is therefore not a source of air pollutants. Bel Marin Keys Units I-III are developed and are currently a source of air pollutants resulting primarily from automobile emissions. The closest Bay Area Pollution Control District (BAAPCD) monitoring station is in San Rafael, about 7 miles to the south. Table 4 of Appendix C shows high average readings taken at that station. The following summarizes conditions for San Rafael in 1975:

POLLUTANT

	<u>Oxidant</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Dioxide</u>	<u>Sulfur Dioxide</u>	<u>Total Suspended Particulate</u>
Maximum*	13.0	10.0	15.0	0.018	30.0 (mean)
DSE**	1	1	0	0	0

*For oxidant and for nitrogen dioxide, maximum is the highest hourly average value expressed in parts per hundred million. For carbon monoxide, maximum is highest 8-hour average value in parts per million. (The 1-hour standard for carbon monoxide was never exceeded during the year.) For sulfur dioxide, maximum is the highest 24-hour average value expressed in parts per million. For total suspended particulates, mean is the annual geometric mean in micrograms per cubic meter.

**DSE is number of days ambient air quality standard was exceeded in 1975.

2.41. Ignacio Industrial Park. The site proposed for the Ignacio Industrial Park Unit 3 is currently not developed and is not a source of air pollution. The Ignacio Industrial Park Unit 1, to the west, is developed and is a source of vehicular emissions. The air pollutant background data for this site is the same as that for Bel Marin Keys Unit IV.

2.42. Social Setting. The two project sites are currently undeveloped. Unit IV is adjacent to an existing 350-acre residential development while Unit 3 is adjacent to industrial/commercial development. A mobile home park lies to the southwest, while several farm buildings in a wooded area are to the northeast of Ignacio Industrial Park.

2.43. Bel Marin Keys. Unit IV is located entirely within Marin County Census Tract 1043. The 1974 population of the tract, which includes Units I, II, and III, was 1,375, an average of 2.23 individuals per household. School enrollment was 275, and the number employed was 570, of which 296 were employed in San Francisco and 274 in Marin County. The major occupational categories were primarily professional and technical. The 1974 median family income was \$16,000 per year, and only three families had incomes below the poverty level.

2.44. In 1974 the tract contained 614 units, of which 554 were owner-occupied and 60 were renter-occupied. The median value of the owner-occupied units was approximately \$75,000, and the renter-occupied median rent was \$275 per month. More current figures are not available. Approximately one-third of the housing available in the tract was

constructed between 1960 and 1965, and two-thirds between 1965 and 1968. Construction of Units I, II, and III has been a major growth impetus in Tract 1043.

2.45. Ignacio Industrial Park. A farm between Ignacio Industrial Park and Bel Marin Keys and Los Robles Mobile Home Park comprise the residential development near Unit 3. All other existing development is industrial/commercial in nature and will be discussed in the section on the economic setting.

2.46. Economic Setting. Bel Marin Keys and Ignacio Industrial Park have traditionally been areas of agricultural activity, primarily the production of certified seed and hay, for nearly three-quarters of a century. Beginning in the "sixties," industrial/commercial activities began to displace agriculture as an economic base for the area, and residential development began. These changes have increased the value of the land while, concurrently, revenue from property taxes has also increased. All of the industrial/commercial development has occurred in the Ignacio Industrial Park area west of Bel Marin Keys, and most of the residential development has occurred in Bel Marin Keys.

2.47. Bel Marin Keys. The fiscal 1977-78 tax rate for undeveloped property was \$12.25 per \$100 of assessed value and for developed property in Units I, II, and III was approximately \$16.00 per \$100 of assessed value. The developed area is in the Bel Marin Keys Community Services District. Land improvements and personal property were taxed at \$9.00 per \$100 of assessed value by the North Marin County Water District. For example, a house purchased for \$40,000 would have an assessed value of almost \$10,000 and an annual property tax of \$1,307.

2.48. The tax revenue generated from the undeveloped Unit IV site is difficult to estimate since portions of two assessor's parcels are involved. Roughly estimating, the annual tax revenue based on 1977-78 figures was approximately \$1,013,000.

2.49. Ignacio Industrial Park. The 159-acre undeveloped property that is proposed for Unit 3 development and for flood-ponding use was assessed at \$15,000 for 1975. The assessed value was divided between Unit 3 and the flood-ponding area as follows: \$5,812 for Unit 3's 40 acres and \$9,188 for the 119-acre flood-ponding area. The County-appraised market value of \$60,000 represents an average of \$375 per acre, or \$.0086 a square foot, an extremely low land value for industrial/commercial property in Marin County. The current low assessed valuation of the flood-ponding area is due to the property being seasonally flooded and to various easements and restrictions. These include the 46-acre drainage and ponding easements held by the Flood Control District, a Pacific Gas and Electric Company tower line easement, and an airport approach zone clearance easement.

2.50. At the 1974-75 tax rate of \$10.61 per \$100 of assessed value, the property generated \$1,590 in revenue, or approximately \$9.94 per acre. The property currently generates no other income and requires no public expenditures except the cost to the Flood Control District of monitoring and maintaining the drainage and ponding easements acquired in January of 1975. See Table 5, Appendix C for the property valuations of the entire Ignacio Industrial Park covered by the original M-3 Master Plan. The revenue obtained is distributed amongst various school districts and other special districts in Marin County.

2.51. Approximately 950 persons are employed in the project area. About 500 work in the 65 enterprises comprising Hamilton Industrial Park and 67 at Soiland Company, Inc. The remainder of the work force is divided between Digital Telephone Systems, Inc. and Bel Marin Commerce Park Unit I. Employee density is 19 employees per acre at Hamilton Industrial Park and approximately 50 employees per acre at Digital Telephone Systems, Inc. Table 6, Appendix C lists the occupation of the employees. The majority are of a skilled and semi-skilled type.

2.52. Community Services. The two projects are served by the same districts, but due to the different purpose of each (residential compared to industrial/commercial), some of the services are different. Services are currently provided to Bel Marin Keys and Ignacio Industrial Park by Marin County, several special districts, and private enterprises.

2.53. Bel Marin Keys. The proposed project lies within the jurisdiction of the Novato Unified School District, which includes Hamilton-Meadow Park School (grades 1-6), San Jose Junior High School (grades 7 and 8), and Novato High School (grades 9-12). Bus service is provided between the existing development and each of the schools. Enrollment in the district has been decreasing during the last several years, projected enrollment for the 1975-76 year being 11,500, 150 less than the previous year. All three schools have capacity for more students. No future expansion is planned, and several future school sites held by the school district are being evaluated as to their future need. The north campus of the Marin Community College District is under construction in nearby Indian Valley.

2.54. Fire protection for the Bel Marin Keys area is provided by the Novato Fire District from its station #3 at Entrada Drive, which was recently completed. Response time to the area varies from two to three minutes, depending on traffic conditions. Bel Marin Keys Boulevard is the only access route to the development.

2.55. The Marin County Sheriff's Department is responsible for law enforcement in the area, which is on an established patrol route with a service frequency of approximately once every two hours. Response time to calls is ten minutes or less.

2.56. The proposed project is within the jurisdiction of the North Marin County Water District. Water shortage conditions now exist, and regulations regarding new connections are in effect. These restrictions prohibit any new service connection having a meter size larger than one inch to the existing water distribution system. No new extensions to the water distribution system are currently being planned.

2.57. Major water shortage problems occur in the district during the peak summer usage period, and, consequently, the district is taking measures to increase its water capacity. The upgrading of the Stafford Plant has made additional water available, half of which has already been allocated. An intertie agreement with the City of Petaluma will allow more water to be available to the district during peak-use periods.

2.58. Sewer service is provided by the Novato Sanitary District No. 6. Sewage is treated at the Ignacio Treatment Plant and is carried by an outfall line, after secondary treatment, to San Pablo Bay. The plant, which has a capacity of 1.2 million gallons per day, has been upgraded to meet increasingly stringent water quality standards set by the San Francisco Bay Regional Water Quality Control Board. Under current standards, the treatment plant has capacity for more development in the area.

2.59. Solid waste disposal in the area is provided by the Novato Disposal Service, which hauls the waste to the Redwood Sanitary Landfill four miles north of Novato near U.S. Route 101. The landfill complies with the local refuse disposal standards of the Marin County Health Department. Gas and electricity are provided by Pacific Gas and Electric Company, while Pacific Telephone Company provides telephone service to the project area. The Bel Marin Keys Community Services District maintains the lagoon and levee system by contracting out any required work.

2.60. Ignacio Industrial Park. The project site is within the boundaries of the Novato Fire District and is served by the recently completed Station #3. Funds for the station, a new firetruck, and 12 additional firemen have been allocated from fire district taxes collected in 1974.

2.61. When Ignacio Industrial Park annexes to the City of Novato, it will be served by the Novato Police Department. Currently the Marin County Sheriff's Department has jurisdiction in the area. Response time is eight minutes or less.

2.62. The project site is currently served by the North Marin County Water District. See paragraph 2.56 for a discussion of the water shortage situation. The district is funded by initial charges made when service is started, by monthly service charges, and by special bonds

while property taxes are used to pay off bonds for increased water supply. The developer pays for all construction costs incurred in bringing water to the property. Ignacio Industrial Park Units 1 and 2 have been allocated nine and 38 acre-feet of water, respectively.

2.63. The Unit 3 site is not now within the boundaries of a wastewater sanitation district. If development proceeds, it will annex to the Novato Sanitary District No. 6. See paragraph 2.58 for a discussion of the sewage treatment plant. Sanitary district funding is from connection charges and property tax levies, and all on-site connections are paid for by the property owner. In Ignacio Industrial Park's case, the developer paid for the off-site connection to the treatment plant as well. This connection was sized to serve Unit 3 as well as Unit 1 and 2.

2.64. Solid waste disposal is provided by the Novato Disposal Service, a private firm. Gas and electricity are provided by Pacific Gas and Electric Company, while Pacific Telephone Company provides telephone service in the project area. The Marin/Sonoma Mosquito Abatement District undertakes abatement measures in response to complaints about mosquitoes and yellow jackets. Where property owners create breeding areas for mosquitoes, the district can request that the property owner undertake abatement procedures. The Marin County Flood Control and Water Conservation District manages flood-ponding areas and is funded from property taxes in Marin County. The Unit 3 site is in Zone #1, which is funded by taxes on property within its boundaries.

Traffic Circulation.

2.65. Automobile traffic. The only vehicular access to the two project sites is by Bel Marin Keys Boulevard, a two-lane street approximately 26 feet wide in the Ignacio Industrial Park area and a divided four-lane street approximately 64 feet wide (not including the power-line easement in the median strip) in the Bel Marin Keys area (see Plate 4). It intersects with Nave Drive and the Ignacio Boulevard/U.S. Route 101 interchange at its western terminus.

2.66. South of Bel Marin Keys Boulevard, Nave Drive is a two-lane street serving nearby commercial uses and providing access to Hamilton Air Force Base. North of the boulevard, Nave Drive has three lanes (two northbound and one southbound) ending at Ignacio Boulevard. One northbound lane provides northbound access to the freeway while the other serves as a left-turn lane onto Ignacio Boulevard.

2.67. The intersection of Bel Marin Keys Boulevard and Nave Drive, including the northbound off-ramp from the freeway, has an awkward configuration, requiring northbound traffic for Bel Marin Keys Boulevard from the freeway to cross in front of southbound Nave Drive traffic and

then to turn left in front of northbound Nave Drive traffic onto the boulevard. Southbound traffic for Bel Marin Keys and Ignacio Industrial Park requires a similar criss-cross pattern. A stop sign controls the southbound traffic on Nave Drive while another stop sign controls the westbound traffic on Bel Marin Keys Boulevard.

2.68. In September of 1974, the intersection was operating at Service Level D (see Table 2, Appendix C for a description of the various levels of service), a level involving substantial delays and queues on approaches to the intersection. The current volume of traffic is 620 vehicles per peak hour and approximately 6,444 vehicles per day (see Table 3, Appendix B).

2.69. At the present time the entire Ignacio Boulevard/U.S. Route 101 interchange is slated for funding under the Federal Urban Program to revamp the current configuration if the program is extended by Congress and if it stays as a high priority on Marin County's Federal Aid Urban Project list. Revamping of the interchange will alter the traffic circulation pattern, especially at the intersection of Nave Drive and Bel Marin Keys Boulevard.

2.70. Bus traffic. The Golden Gate Transportation District operates several bus routes serving the Bel Marin Keys-Ignacio Industrial Park area; however, only one route leaves U.S. Route 101 at Nave Drive to stop at Bel Marin Keys Boulevard. No routes enter the actual Bel Marin Keys development, and the existing bus stop is not within walking distance of either project site.

2.71. Noise Setting. The existing noise levels of Bel Marin Keys and Ignacio Industrial Park are fairly low, although the levels rise near U.S. Route 101, State Route 37, Hamilton Air Force Base, and the Northwestern Pacific Railroad tracks.

2.72. Bel Marin Keys. The predominant source of noise in Units I, II, and III is from internal traffic, power lawnmowers, and motorboats being used in the existing lagoons. Ongoing construction activities in Unit III provide a source of noise in that part of the development. Aircraft operations provide intermittent sources of noise.

2.73. Ignacio Industrial Park. The major sources of noise in the project area are aircraft taking off and landing at nearby Hamilton Air Force Base, vehicular traffic on Bel Marin Keys Boulevard, and the construction and operation activities of existing industrial/commercial developments. The level of noise at the Unit 3 site is low.

Visual Setting.

2.74. Bel Marin Keys. The project site and environs are comprised of bay lowlands, with the exception of Headquarter Hill, which rises to an elevation of 43 feet above sea level. The area offers expansive vistas across San Pablo Bay to the east and views of hills to the west. Hamilton Air Force Base facilities are the most prominent visual feature looking south. The existing Bel Marin Keys units with homes and lagoons characterize foreground views to the north, while the hills around Black Point form background views. A large overhead power transmission line traverses the property, primarily along the Bel Marin Keys Boulevard right-of-way.

2.75. Residential structures introduced by preceding units are visible from a wide area, due to the level topography that surrounds Bel Marin Keys. State Route 37 affords an uninterrupted view of the completed units, although dikes block out most low profile features, such as the lagoons. Clear views of the developed portion of the site are not as readily available from U.S. Route 101, due to the freeway's greater distance from Units I, II, and III, the presence of Headquarter Hill, and the obstructions introduced by development that has occurred along parts of this stretch of the freeway. Traffic on State Route 37 is likewise more visible from exterior portions of the project area than that on U.S. Route 101.

2.76. Visual access of the lagoons from internal streets in the developed units is impeded by fencing, landscaping, and the spacing of buildings.

2.77. Ignacio Industrial Park. Unit 3 is situated in what was once a vast flood plain, extending from the City of Novato to San Pablo Bay. A feeling of wide-open space exists on the site, broken only by the group of trees along the dike and isolated large valley oaks growing on the low hillside near Bel Marin Keys Boulevard. A small water tank represents the only man-made landmark on the low hillside; otherwise, the majority of the landscape is open and sparsely vegetated in the summer, open and wet in the winter.

2.78. An area which retains water all year round is seen near Bel Marin Keys Boulevard to the north. An area north of San Jose Creek has abundant vegetation, including clumps of willows and Oregon ash. Fill excavations for Pond 2 have scarred the land and have left dirt roadways, large empty ponded areas, etc., across a 43-acre portion of the site.

2.79. Prominent features of the surrounding landscape include a +120 feet MSL elevation hill on Hamilton Air Force Base, willows lining the banks of San Jose Creek, landscaped and completed buildings of Ignacio Industrial Park Unit 1, site preparation activities (bulldozers,

trucks, blowing soil) on Ignacio Industrial Park Unit 2, traffic along Bel Marin Keys Boulevard, and a cluster of eucalyptus trees on the adjacent property to the east near Bel Marin Keys Boulevard.

2.80. Historical and Archeological Resources. The Coast Miwok Indians were the native California people who occupied the region around San Francisco and San Pablo Bays. In the early nineteenth century the project area became a part of a large 6,000-acre estate, which was later settled on by homesteaders. By 1897 levees were constructed along the shoreline of San Pablo Bay to allow farming in the area. Agriculture has been prominent in the area until the present time.

2.81. In compliance with Section 106 of the National Preservation Act of 1966 (16 U.S.C. 470(f)), the most recent listing of the National Register of Historic Places (Federal Register, 10 February 1976, with monthly supplements) has been consulted and a determination has been made that no National Register property would be affected by the proposed projects. In compliance with Executive Order 11593 of 13 May 1971, the State Historic Preservation Officer has been contacted to determine if there are any State Historical Landmarks or State Points of Historical Interest which would be affected by the projects.

2.82. Bel Marin Keys. Records filed with the State Archeologist, as well as a recent study of the Novato Creek watershed (Royston, Hanamoto, Beck, and Abey, 1972), indicate that there are no known archeological resources on the Unit IV site. There are, however, several known sites to the south and west of the project site. The only structures of possible historic significance on-site are those associated with the agricultural use of the site.

2.83. Ignacio Industrial Park. An archeological field investigation of the hill northeast of Unit 3 next to Bel Marin Keys Boulevard (page VI(1), Appendix C) failed to discover any artifacts older than the early nineteenth century (homesteading period).

3.00. THE RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS

3.01. Land Use and Zoning. Bel Marin Keys and Ignacio Industrial Park lie in an area of Marin County that is used primarily for agricultural activity. The current zoning of the Novato Creek flood plain is for a mixture of water-related medium-density residential uses, industrial and commercial uses, and agricultural uses. Hamilton Air Force Base is zoned for public use.

3.02. Bel Marin Keys. Unit IV lies in an unincorporated portion of Marin County, adjacent to the existing residential units I, II, and III. Much of the undeveloped property, including Unit IV, is used for seed and hay production, with storage facilities located on the site. Unit IV is zoned RSP-1.6 (residential, single-family, planned 1.6 dwelling units). The site also lies within an area zoned F-2 (secondary flooding district) that requires certain standards of development.

3.03. A majority of the land adjoining Bel Marin Keys is undeveloped. Limited commercial, industrial, and residential (mobile home park) development has occurred along U.S. Route 101 and its frontage roads, including parts of Bel Marin Keys Boulevard. Light-industrial development (distributing, warehousing, etc.) has been proposed west of the freeway. Residential development to the north and research facilities to the west are also proposed.

3.04. Ignacio Industrial Park. Existing land use in the project area is depicted in Figure 6, Appendix C. As stated above, limited commercial (Hamilton Industrial Park, Ignacio Industrial Park Unit 1, and Bel Marin Commerce Park Unit 1) and residential (Bel Marin Keys Units I, II, and III and Los Robles Mobile Home Park) development has already taken place. In addition 15 acres are used by the Humane Society of Marin as a wildlife refuge, located next to the south boundary of Unit 2.

3.05. Unit 3 is zoned by Marin County for use as a planned industrial district. Approximately two-thirds of the project site lie within the S-1 (airport safety zone) district, adopted by the County in the mid-fifties to protect surrounding land uses from potential aircraft accidents. Unit 3 also lies within a secondary floodway district that requires certain standards of development.

3.06. The Association of Bay Area Governments (ABAG). ABAG is a voluntary council of local governments formed to meet regional problems by cooperative action by cities and counties. All 95 cities and nine counties in the San Francisco Bay Area can be voting members. Currently 84 cities and seven counties (including Marin County) are members. ABAG works toward solutions of regional problems and is the area-wide comprehensive planning agency for the Bay Region.

3.07. ABAG's "Regional Plan 1970:1990" for the San Francisco Bay Region was approved by the Association's General Assembly on 30 July 1970. Unlike the general plans adopted by cities and counties, this Regional Plan will not be used as the basis for any detailed application of the policy power on a parcel-by-parcel basis, as in the making of zoning or subdivision regulations. Rather, the Plan provides regional policy guidelines to encourage actions by appropriate agencies that will initiate, direct, and promote regional growth and development of the Regional Planning Framework as a guide to regional planning in the future (ABAG, 1970).

3.08. Bel Marin Keys. The ABAG Regional Plan designates the proposed Unit IV development site as "predominately residential." The area to the east and south of the project site is designated as "permanent open space." ABAG indicates that the location of residential development and the condition of the environment will be important factors in meeting regional goals. All governmental levels as well as the private sector should assist in providing the maximum number of housing choices in terms of location, style, neighborhood, and price in each community. (ABAG, 1970).

3.09. Ignacio Industrial Park. The ABAG Regional Plan designates the proposed Unit 3 development site as "predominately basic employment" and the 119-acre flood ponding and wildlife area as "permanent open space." ABAG indicates that maximum employment opportunities should be available to residents within their own communities. The nature and number of these jobs should, however, be consistent with the maintenance of a livable environment (ABAG, 1970).

3.10. San Francisco Bay Conservation and Development Commission (BCDC). BCDC was created in 1965 as a limited regional government agency specifically authorized and directed to carry out the Bay Plan and empowered to raise sufficient funds for this purpose. The objectives of the Bay Plan are to protect the Bay as a great natural resource for the benefit of present and future generations and to develop the Bay and its shoreline to their highest potential with a minimum of Bay filling (BCDC, 1969).

3.11. BCDC does not claim jurisdiction over either project areas; however, any work within 100 feet of the line of highest tidal action would fall under the Bay Plan. Future development of Bel Marin Keys out to San Pablo Bay would adjoin tidal marsh, the designation given by the Bay Plan to the shoreline of Novato Creek and San Pablo Bay.

3.12. Marin County. The Marin Countywide Plan is essentially a political document that was prepared in 1973 under the supervision of the City-County Planning Council, an organization made up of the 11 cities

and the County under joint-powers agreement. The Countywide Plan provides a general guide for the preparation of more detailed local plans; it does not replace or substitute for local plans which are the responsibility of each jurisdiction (Marin County Planning Department, 1973).

3.13. Bel Marin Keys. The Countywide Plan designates the project site as a "conservation zone" which applies to all development 1,000 yards inland from the shore of San Pablo Bay and to the provision of safety areas such as flood plains and airport approach zones. The County has approved the applicant's request for rezoning of Unit IV from "open space" to "residential."

3.14. Ignacio Industrial Park. The Countywide Plan designates the Unit 3 site as "business development area" with "open space" to the north, east, and south. In addition, two of the four "conservation zone" designations apply to most of the site. These designations apply to a 300-foot-wide buffer on each side of all streams, to flood plains, and to airport safety approach zones, requiring the "finding of need" criteria.

3.15. City of Novato. The Novato Area General Plan, prepared in 1967, is essentially a picture of the physical environment that is to be created over a period of years, requiring the combined efforts of private and public concerns (Marin County Planning Department, 1967).

3.16. Bel Marin Keys. Unit IV, though currently in an unincorporated area, is designated "water-related low-density residential." This designation limits the number of dwelling units per acre to 0.1-2.0. The proposed project involves a residential density of 0.1-3.0 dwelling units per acre.

3.17. Ignacio Industrial Park. The General Plan designates the project area as "industrial" for the 45-acre Unit 3 and "marsh" for the 119-acre flood-ponding and wildlife area. Unit 3 is currently in an unincorporated area, although the City of Novato has begun the process of annexing Units 1, and 2, Bel Marin Commerce Park Unit 2, and adjacent parcels. Unit 3 will be required to be annexed by the City when the project annexes to the Novato Sanitary District No. 6 for service.

3.18. Master Plan for Ignacio Industrial Park. The Master Plan (see Document A-9, Appendix A) was prepared and approved in 1971 by the Marin County Board of Supervisors. It is a conceptual plan for the development of the 260-acre area consisting of Ignacio Industrial Park Units 1, 2, and 3, the flood-ponding and wildlife area, and Bel Marin Commerce Park Unit 2. An amendment to the Master Plan is required for Unit 3, which will cover office restrictions, noise provisions, lot sizing, fill level, building sizing, and permitted uses. The amendment has been approved (see paragraph 1.17).

3.19. Summary. Of the various plans that concern the area, briefly discussed above, the proposed projects are not at variance with them.

4.00. THE PROBABLE IMPACTS OF THE PROPOSED ACTION ON THE ENVIRONMENT

Impact on Land Use.

4.01. Bel Marin Keys. The proposed project will change 99 acres of essentially undeveloped agricultural land to residential and recreational uses. Residential use will occupy 48 acres, parks and islands 5 acres, and lagoons 46 acres. Over one-half of the Unit IV site will be lagoons, which are intended to serve as aquatic habitat, ponding capacity, recreation, and open space. Existing buildings will be removed or relocated at an appropriate location. A rezoning of the 99-acre site was adopted during December of 1976 to allow implementation of the project.

4.02. The Marin County Airport Land Use Commission (ALUC) and the Marin County Planning Department have identified potential land use conflicts between the continued development of Bel Marin Keys and the future utilization of Hamilton Air Force Base. These include aircraft noise contour zones, aircraft safety zones, and access and circulation concerns, which could affect the proposed land use of Unit IV, depending on whether the base continues as an airport or not.

4.03. Ignacio Industrial Park. The proposed project will change approximately 45 acres of current open space to commercial and light-industrial uses. Approximately two-thirds of Unit 3 will be within an S-1 zoning district (airport safety zone), which restricts permitted uses, building height limits, and employee densities. The existing 119-acre open space between Unit 3 and Bel Marin Keys will remain, serving a dual role as a flood-ponding area and as a wildlife habitat.

4.04. Cumulative impacts. Completion of both projects, including existing and future development, will change approximately 2,000 acres of land from agricultural use to a combination of residential, commercial, light-industrial, and recreational uses. The former open space of the area will have been transformed into urban space, contrasting with the basic agricultural use of the Novato Creek flood plain.

Impacts on Vegetation and Wildlife.

4.05. Bel Marin Keys. Approximately 99 acres of open space/wildlife habitat would be replaced by lagoons, residential development, and landscaping plants, and resident plants and animals would be eliminated from the site. There will be an increase in human and domestic animal disturbance to nearby marshes, which will degrade possible marsh restoration areas being considered by the California Department of Fish and Game to the west and north of the project site. The depth and configuration of the proposed lagoons would create habitat favorable to various aquatic species, particularly striped bass, and the Department is currently evaluating the establishment of striped bass fisheries in

similar lagoons. However, the lagoons would be unsuitable for waterfowl nesting areas, due to the proximity of residences and the possible use of small boats. Additional enhancement measures would be required for wildlife to use the lagoons as feeding and nesting areas.

4.06. Ignacio Industrial Park. Development of Unit 3 will reduce by 45 acres the available open space/wildlife habitat on the site. There would be a complete loss of the upland habitat created by the grassy knoll and large oak trees, and animals utilizing the area would be eliminated. An adverse impact on animals sensitive to human and domestic animal activities can be expected in the area and on those animals in the nearby refuge. Mosquito and midge production in the area, although providing food for birds, might be a problem, and there would be an adverse impact on vegetation resulting from parking lot pollutants in storm-water runoff.

4.07. Cumulative impacts. Past, presently proposed, and future development would adversely effect the existing vegetation and wildlife on approximately 2,000 acres of land and eliminate most of the existing wildlife habitat, as well as most of the seed and hay production areas. Development would create increased human and domestic animal disturbance to nearby marshes and would have a significant adverse impact on marsh vegetation and wildlife. Marshlands and other wetland areas around San Pablo Bay are in very short supply. Development would remove the option of returning the area landward of the levee to marshland. However, the recently established San Pablo Bay State Wildlife Area, located along the western side of San Pablo Bay, will preserve the wetlands bayward of the levee (see Document A-11, Appendix A).

4.08. Endangered and threatened species. The endangered or threatened animal species that may be present in the vicinity and adversely effected by the proposed project are the salt marsh harvest mouse, California black rail, and the California brown pelican. There are breeding areas for the California clapper rail in the vicinity. A permit can not be issued until the U.S. Fish and Wildlife Service gives a determination of the actual impact on these species.

Geologic Impacts.

4.09. Seismicity. Seismic activity is continuing and it can be expected that the project sites will be periodically subjected to varying intensities of shaking as a result of earthquakes originating along the active fault systems within the Bay Area. Strong motion can be expected at the sites as a result of large-magnitude earthquakes. Ground motion during earthquakes may cause embankment or slope-spreading and, in some cases, overall slope failures. Based on the effects of ground motions induced by past earthquakes on material similar to those underlying the sites, localized ground failure in the form of lurching, cracking, or subsidence near channels or sloughs may occur. In general, ground shaking during earthquakes tends to be more severe in filled marshland areas than in firmer soil areas. There are no known active earthquake faults directly beneath the site that would present the risk of surface rupture.

4.10. Liquefaction. No significant adverse impacts are expected at the Ignacio Industrial Park site from liquefaction since the results of the geotechnical investigation, performed for the site, indicate that the underlying sandy soils are sufficiently dense or contain enough fine-grained binder soils to minimize liquefaction potential. Liquefaction potential for the Bel Marin Keys Unit IV site may be similar to that of the Ignacio Industrial Park Unit 3 site since they are in the same general area. However, the soils boring data on adjacent sites indicates a great variability of subsurface material. Detailed investigations will be required prior to final design of structures in order to delineate areas with liquefaction potential.

4.11. Settlement. The bay sediments underlying the project sites consist of soft, highly-compressible, unconsolidated, saturated, silty clays and sands containing organic material. Sustained loading by artificial fill material and man-made structures will cause substantial long-term settlement of these features. Differential settlement may result from the variable thickness of the Bay Mud as well as variations of the soil conditions, original and present topography, construction procedures, and method of loading.

4.12. Tsunami potential. The project sites are protected by levees from seven to eight feet in elevation (mean sea level datum). The estimated runup of a 100-year tsunamis is 3.7 feet, and the estimated runup of a 500-year tsunamis is 5.1 feet (Department of the Army, 1975). Therefore, there should be no adverse impacts on the project sites from tsunami runup.

Hydrologic Impacts.

4.13. Bel Marin Keys. Unit IV development should have little or no adverse hydrologic impact on the sites. Existing drainage ditches and fields would be replaced by levees and lagoons. Surface runoff would be channeled into the lagoons where large pipes would carry the water over to existing lagoons and then into Novato Creek when the lagoons become overfilled during periods of heavy rainfall.

4.14. The site is subject to inundation and should the area be flooded there would be an adverse impact due to flooding of parking areas, stationary utilities, and dwellings.

4.15. Ignacio Industrial Park. Unit 3 development should have little or no adverse environmental impact on the site. Both San Jose and Pacheco Creeks would discharge into the existing pond in the southernly portion of the property. Water would then flow northward through the existing slough to Novato Creek via tide gates.

4.16. The applicant has calculated that Unit 3 would be protected from flooding in the event of storms of no greater intensity than 6 inches in 24 hours, a 100-year storm, generating 1,250 to 1,400 acre-feet of runoff (Foreaker, 1975). Under conditions worse than the 100-year design storm, the area would be inundated. This information is based on the U.S. Weather Bureau Technical Report No. 40 (Holmes, 1975).

4.17. Cumulative impacts. Development in the Novato Creek flood plain would increase the potential for erosion from construction earthwork and would increase the area of urban development subject to flooding. Existing seasonal wetland would be replaced by deep-water lagoons containing water year-round.

Water Quality Impacts.

4.18. Bel Marin Keys. The water quality of the proposed lagoons would probably resemble that of the existing lagoons immediately adjacent to the proposed project. The existing lagoons have no significant visual indication of eutrophication or quality degradation. Such indicators as odors or algae concentrations are not present. However, oil and grease from boating activities on the proposed lagoons would degrade the water quality.

4.19. Sediment originating from construction activities would remain on site and have no adverse effect on future discharges into Novato Creek, since there would be no continuous hydrologic connection between the lagoons and the creek. However, during periods of heavy rainfall, the normally closed pipes between the lagoons and the creek could be opened to allow any overflow into Novato Creek.

4.20. Ignacio Industrial Park. There would be an adverse impact resulting from parking lot runoff containing such pollutants as oil, grease, and heavy metals, which would lower the quality of the water in the slough. These pollutants would enter the 119-acre flood-ponding area from two points of discharge.

4.21. Cumulative impacts. As development increases in the once natural floodplain of Novato Creek the greater will be the impact on water quality from urban runoff and man's activities. Should the natural disasters of earthquake and/or inundation take place in the area, the degree of development will have a direct effect on the exposure of harmful materials to waters in the area.

4.22. Impact on Climate. The two projects' impact on climate would be very minimal. The increase in paved surface area would increase reflectivity and would, at times, result in a minor, localized increase in temperature.

Impact on Air Quality.

4.23. Bel Marin Keys. Air pollutant emissions would result from construction activity (fugitive dust and vehicle emissions) and from vehicle usage of the completed development. Meaningful estimates of vehicular miles traveled and volumes of pollutants discharged are difficult to derive at this time due to the uncertainties that remain with respect to how the project would alter or add to traffic flow patterns in the area and air basin. A rough estimate of the quantities of pollutants that would result from mobile sources has been compiled and is presented in Table 6, Appendix B. Although the quantities shown do not represent significant additions to the pollutant level of the basin as a whole, the project may nevertheless contribute more emissions than other projects of similar scale because of the relative isolation of the site and because there are currently no proposed additional public transportation links to the project site.

4.24. Ignacio Industrial Park. The major impact on air quality resulting from this activity would be increased emissions due to increased automobile traffic and increased industrial activity. It is not possible at this time to assess the impact of industrial emissions because it is not known exactly what kinds of industries would be developed in the proposed Unit 3. Performance standards pertaining to industry and its effect on air quality are included in the Master Plan for the Ignacio Industrial Park. These standards are discussed on pages 62 and 63, Appendix C. The County currently has no process for checking that an industry meets performance standards before it is allowed to develop in the Industrial Park, and no County personnel are available for monitoring industry after development to insure that the performance standards are met (Appendix C). Industries developing in the Park would, however, have to coordinate with the BAAPCD to determine if permits are required.

4.25. Air pollutant concentrations resulting from project traffic have been estimated and are presented in Table 4, Appendix C. Background concentrations for the San Rafael area (closest monitoring station) have also been calculated and have been added to the "project only" concentrations to give an estimate of total background/project concentrations which might result. The concentrations indicated in Table 4 show that contaminant levels for carbon monoxide approach the Federal Standard and the concentrations for nitrogen dioxide exceed the standard. Other levels are below the standards.

4.26. Cumulative impacts. The two projects would share common access from Bel Marin Keys Boulevard, and would together cause increased air pollutant emissions along this street and other streets which feed into the Boulevard (see Plate 4). Resulting air pollutant concentrations along these streets would increase in proportion to the increases in traffic, with concentrations being highest at distances less than 100

to 150 meters from the pavement. The two projects together would add to regional air pollution problems, but on this scale probably no more so than if they were not immediately adjacent. Local transportation plans incorporating jitney service or other means of decreasing vehicle miles traveled would lessen the air quality impact of the subject activities. See Document A-15, Appendix A for air quality data concerning both projects.

Social Impacts.

4.27. Bel Marin Keys. Unit IV will add 158 new dwelling units. These units will be detached single-family houses with an average floor space of 2,000 square feet and with an average expected cost of \$100,000. A majority of the new units will be more expensive, limiting their availability to those buyers in the higher income brackets.

4.28. Based upon an average mean figure of 3.3 individuals per household, the census tract population can be expected to increase by approximately 521 individuals. If a proposed growth control ordinance is adopted by Marin County, the new units to be built per year in Unit IV would comprise a significant portion of the 500-unit annual quota for the entire county envisioned at this time.

4.29. Ignacio Industrial Park. Unit 3 is not a residential development; however, it could be considered as having an indirect growth-inducing impact on the surrounding region as new employees of the industrial/commercial development relocate from other locales. Unit 3 will provide a significant number of new jobs.

4.30. Cumulative Impacts. The two projects, including existing and future development, will have a significant growth-inducing impact when considered together. The construction of streets, extension of utilities, development of industrial/commercial facilities, and construction of residential units would facilitate further development. If, for example, the remaining 1,000 acres of Bel Marin Keys considered for development were built on at an average density of three units per acre, 3,000 dwelling units could be constructed. The increase in new residents (approximately 10,000 assuming 3.3 persons per household) would further increase the demand for goods and services. This scale of habitation would have significant impacts on the surrounding wildlife habitat and water resources.

Economic Impacts.

4.31. Bel Marin Keys. Development of Unit IV will increase assessed valuations in the project area by the construction of streets, utilities, and residential structures. Tax revenue to Marin County would increase due to the expansion of the property tax base. Presently,

there is a \$3.00 per \$100 assessed value tax rate levied by the Bel Marin Keys Community Services District. Upon annexation of Unit IV, the rate could be reduced since the budgetary responsibilities of the district would be spread among more taxpayers, thus somewhat reducing the tax burden upon existing Bel Marin Keys residents.

4.32. Estimated revenues from property taxes would be in excess of \$800,000 yearly based on current tax rates and increased assessed values due to development (see Table 13, Appendix B). The distribution of this tax revenue among the various taxing districts is shown in Table 14, Appendix B. No commercial facilities would be built on the site.

4.33. The construction of Unit IV will provide a limited amount of construction jobs on a temporary basis. The project will encourage population and economic growth through the construction of new residential units. New residents will increase the demand for goods and services, encouraging further growth.

4.34. In considering the revenue/cost balance of the project, there are several complicating factors:

- a. Average costs may not accurately reflect true costs.
- b. Certain services such as street improvements will require greater expenditures than others.
- c. Cost approximations are only as accurate as speculative population estimates.
- d. The questions of annexation to the Sanitary District and the conditions of such annexation are unresolved.
- e. Water District revenues are primarily obtained through service charges. With these limitations in mind, refer to Table 16, Appendix B for a comparison of annual costs and revenues.

4.35. If Unit IV is annexed to the City of Novato as a condition of being annexed to the Novato Sanitary District No. 6, the following changes in the tax rates would occur:

- a. Property tax rates in Bel Marin Keys would increase by \$.95 per \$100 of assessed valuation (using 1974 figures).
- b. Unit IV residents would be paying a tax rate of \$14.41 per \$100 of assessed valuation.
- c. The tax revenue to the City of Novato from the residential portion of Unit IV would be \$45,125 per year.

d. The total costs of the project would be \$45,600 per year (using projected population increases) or \$38 per capita for municipal services, based on annexation to Novato.

4.36. Ignacio Industrial Park. Future industrial/commercial development at Unit 3 will add a relatively small amount to the economic base of Marin County, although representing an enlargement of one of the seven industrial/commercial areas in the county. It will provide employment opportunities and increased property tax revenue, as well as increased costs for community services.

4.37. Potential temporary employment for the construction of Unit 3's facilities is 200-300 persons. Permanent employment after completion of the project would be approximately 800 or 20 persons per acre, an employment density consistent with findings at already developed portions of Hamilton Industrial Park, the employment density restriction imposed on part of Ignacio Industrial Park because of the airport safety zone, and the Marin Countywide Plan.

4.38. Full development of Unit 3 will take five to seven years after settlement of the fill. The length of development time before the impacts on employment are fully realized will depend on how rapidly businesses locate in the project site which, in turn, depends on the competitive position of the project relative to industrial/commercial developments elsewhere.

4.39. The amount of revenue from property taxes from the development of Unit 3 will depend upon the type and extent of development. For the purpose of comparison, two possibilities are analyzed. One possibility is light-industrial/warehouse use, which would generate approximately \$340,000 per year. The other possibility is a mixture of warehouse and office/research development use, which would generate approximately \$660,000 per year. This revenue would be a large increase from the present annual \$1,600. See Table 8, Appendix C for the potential value of Unit 3.

4.40. Cumulative impacts. Development of Unit IV and Unit 3 will provide temporary employment to approximately 350 persons and permanent employment for approximately 800 persons. When existing development is considered, the total number of employees is increased to over 3,000 persons (see Table 7, Appendix C).

4.41. Estimated revenue from the two projects would be approximately \$1,140,000 per year or \$1,460,000 per year depending on the ultimate land use in Unit 3 of Ignacio Industrial Park. This revenue would accrue to Marin County, the City of Novato (Unit 3 only), and the various districts servicing the project areas. Existing and future development would increase the amount of revenue (property tax and sales tax) significantly, while increasing the costs of servicing the project area.

Impact on Community Services.

4.42. Bel Marin Keys. Unit IV, when developed, would add approximately 256 students to the Novato Unified School District, distributed throughout all grades. Capacity at San Jose Junior High School, as well as Hamilton-Meadow Park School, is sufficient; however, Novato High School is nearing capacity and is expected to increase its enrollment in the next few years. The relative isolation of the site from local schools makes school busing costs relatively higher than closer developments of a similar scale.

4.43. Unit IV can be adequately serviced by the Novato Fire District. Fire-fighting equipment used can handle structures up to 35 feet high. Turning radii of cul-de-sacs are important in providing proper access by fire-fighting equipment; all cul-de-sacs in Unit IV are to be approximately 100 feet in diameter, which should be adequate. The Novato Fire Chief has expressed concern over the cul-de-sac street arrangement in relationship to response during a major disaster, such as earthquakes, widespread fires, and floods.

4.44. The development should not cause an unusual or excessive burden on the Sheriff's Department; however, the Department should be given the opportunity to make review comments concerning burglary prevention and the ease of police patrol access.

4.45. Water consumption in the North Marin district has been increasing at an average annual rate of 2.5 percent over the past ten years. Average use during peak periods is expected to increase through 1977 by 18 gallons per day per connection to 1,004 gallons per day. Upon completion of Unit IV, the estimated annual consumption would be 288,603 gallons per day (see Table 17, page 44, Appendix B). Currently, a water shortage exists in Marin County and it is unknown at the present time whether water will be available for the Unit IV site.

4.46. Upon completion Unit IV would produce approximately 108,000 gallons per day of liquid waste. Under current water quality standards, Novato Sanitary District No. 6 could provide the necessary service. However, since the water quality standards are expected to be revised and since any new restrictions placed on the district are unknown, the possibility of providing service to the project site is currently undeterminable.

4.47. Solid waste demands are expected to be accommodated by the disposal company servicing the existing development, since space is available at the company's disposal site. Due to the accessibility of existing gas mains and electric lines, no extensions will be necessary except into the interior of the site. No adverse impacts upon gas or electrical supply systems are expected. Underground telephone lines already exist along Bel Marin Keys Boulevard, and new extensions will also be put underground. No adverse impacts upon the existing telephone system are expected.

4.48. Unit IV will provide additional recreation facilities for Bel Marin Keys residents, such as a recreation center, tennis courts, mini-parks, and a "pleasure" island. No direct access to San Pablo Bay will be provided. The responsibilities of the Bel Marin Keys Community Services District would be expanded in maintaining the additional lagoon area and recreational facilities, provided Unit IV is annexed into the district.

4.49. Ignacio Industrial Park. No adverse impact is expected from the addition of Unit 3 to the Novato Fire District, since development in the project area has already been anticipated. Water availability for water protection will be reviewed with the North Marin Water District when subdivision plans for Unit 3 are considered. No additional police officers will be necessary, with patrolling of the site being done during periods between emergency calls.

4.50. Using the assumption that all development in Unit 3 will be in light non-water-using industry with 800 employees using 50 gallons of water per day each, the yearly demand would be approximately 55 acre-feet. Industries or services using large amounts of cleaning water would increase the demand. Using the assumption that 12 acres of the site will be used for office space with .081 gallons per square foot per day, the yearly demand would be approximately 45 acre-feet. Another 41 acre-feet would be needed for the remaining 28 acres of warehouses with the resultant employees. An annual demand between 55 and 86 acre-feet of water can be expected from the development of Unit 3. Currently, there is not enough water capacity to allow Unit 3 to be served by the North Marin Water District. All water-associated costs of the project would be borne by the developer.

4.51. Upon completion Unit 3 would produce approximately 50,000 gallons of wastewater per weekday, representing four percent of the plant's 1.2 million gallons per day capacity. It is expected that the capacity is adequate for the additional demand. Solid waste demands are expected to be accommodated by the disposal company servicing the project area, since space is available at the company's disposal site. No adverse impacts upon gas or electrical supply systems and upon the existing telephone system are expected when hooked up after the completion of Unit 3.

4.52. The Marin County Flood Control District will be affected, since 76 acres of flood-ponding area, in addition to the 43 acres already deeded in drainage and ponding easements, will be turned over to the district, either in fee or for management. Managing costs of the 119-acre flood-ponding area should be minimal since the District already has sufficient staff. Costs of managing the area for wildlife will also be incurred, but the final decision on whether the District or the California State Department of Fish and Game will manage it has not been made.

4.53. The large changes in the drainage system of the San Jose-Pacheco Creeks basin involved in the preparation of Unit 3 will cause an adverse impact on the Mosquito Abatement District. Since it is not possible to predict the levels of water that will remain in the flood ponding area in critical months nor the success of a possible wildlife habitat management program by controlling water levels in the basin through the use of boards at the box culvert under Bel Marin Keys Boulevard, a prediction of this potential impact cannot be made.

4.54. Cumulative impacts. The development of the two projects, as well as the existing and future development in the area will cause significant impacts, especially on the North Marin Water District due to a shortage of available water. If Bel Marin Keys is fully developed out to San Pablo Bay, the demand for gas and electricity, waste (both liquid and solid), and police and fire protection will increase. The demand for schools within the Keys development itself will increase due to the large number of school-age children that would result from an increase in population.

4.55. Impact on Traffic Circulation. Since there is only a single facility serving the two project areas, a fair estimate of external generation routes can be obtained by comparing actual counts with existing dwelling units (Bel Marin Keys) and with employees per acre (Ignacio Industrial Park). The two projects would add approximately 659 vehicles per peak hour and approximately 4,030 vehicles per day to the existing levels, assuming 8.1 trips per dwelling unit and 60 trips per acre.

4.56. In addition to the traffic generated by the two projects, other developments would also add to the volume. Six developments (see Table 3, Appendix C), already approved or under consideration, would add 15,551 vehicles per day and 1,556 vehicles per peak hour. The cumulative effect of these projects and developments would have a significant impact on traffic operations in the area due to a total daily traffic of 19,581 vehicles per day and 2,215 vehicles per peak hour using the existing facility. Full development of the Bel Marin Keys property would add a further 16,820 vehicle trips per day. See Table 1 for the revised traffic data.

4.57. The largest proportionate increase due to traffic from the projects will be on Bel Marin Keys Boulevard, with 231 percent on the section west of Montego Keys and 87 percent east of Nave Drive. The percentage increases are high, and the total volumes are above the theoretical Service Level C operational volume of the existing street section. The Service Level of a given facility, as defined in the Highway Capacity Manual of the Highway Research Board, is a theoretical traffic volume determined by the physical and operational characteristics of the facility and by stipulated conditions of traffic flow. Flow conditions vary from unrestricted flow at Level A to extreme congestion at Level F. At Service Level C traffic flow is stable with

intermittent but objectionable delays during peak hours. Service Level C is used as a conventional standard for urban design criteria. At Service Level D traffic flow becomes more restricted and delays to vehicles may be substantial during short peaks; however, periodic clearance of queues prevents excessive backups from developing. Service Level D is Marin County's upper limit for traffic flow conditions, beyond which roadway improvements will be required.

4.58. Traffic increments on the other major streets in the project vicinity range from 35 percent on Nave Drive north of Bel Marin Keys Boulevard to a low of 6 percent on Ignacio Boulevard west of U.S. Route 101. None of the final volumes on these streets should have an appreciable effect on existing operational conditions. A second area of potential congestion is the Bel Marin Keys Boulevard-Nave Drive intersection. Although the awkward geometrics and existing controls make precise analysis impossible, some idea of the impact on intersection operations can be gained by applying a critical land analysis procedure to intersection volumes. This analysis is shown in Table 12, Appendix B. This intersection would be operating at Service Levels E or F. It should be noted that the future use of Hamilton Air Force Base may have an impact on this intersection.

Noise Impacts.

4.59. Bel Marin Keys. Construction and development of Unit IV will cause an increase in existing noise levels due to the operation of equipment, building activity, and movement of vehicles to and from the project site. These will be temporary, although the noise of moving vehicles will become a long-term impact as residents drive to and from the site. The level of noise would also increase due to the use of motorboats in the proposed lagoons.

4.60. Of possibly greater consequence than the noise impacts of the proposed project, however, will be the effects of already existing sources on new residents. Of particular concern is the relationship of Hamilton Air Force Base to Unit IV, less than one mile apart. Specific plans for the future use of the base have not yet been established, and, as a result, predictions regarding aircraft-related noise are speculative.

4.61. The Marin County Airport Land Use Commission (ALUC) is responsible for land-use planning in the vicinity of public and military airports. Although ALUC has not yet adopted a land-use plan, the commission has adopted a policy regarding development as it relates to noise. This policy is to exclude new residential development in areas with a community noise equivalent level (CNEL) contour exceeding 60 dbA. Much of Unit IV falls within that range. Any construction within this range would require special insulation in walls and under roofs to limit

the sound level to 45 dbA inside. A perpetual noise pollution deed restriction would be granted to Marin County by each property owner and successor owner, and all potential occupants of residential units within the subdivision would be notified of potential aircraft noise intrusion due to the proximity of the base.

4.62. Ignacio Industrial Park. The development of Unit 3 will result in increased noise levels because of increased vehicular traffic on Bel Marin Keys Boulevard and of construction and operation activities in the industrial area. Construction equipment is usually noisy and will be disturbing to nearby residents, such as those in the trailer park.

4.63. Cumulative impacts. Proposed development in the Bel Marin Keys and Ignacio Industrial Park area would raise the level of noise, although new structures would create physical barriers to sounds originating from Routes 37 and 101, as well as from the railroad tracks. Development of the entire 2,000-acre area would generate increased traffic levels with an attendant increase in noise. Since Bel Marin Keys Boulevard is the only route of egress and ingress, those businesses and residences adjoining it would experience the highest levels of noise.

Visual Impacts.

4.64. Bel Marin Keys. Initial construction would result in clearing and excavation that would temporarily create unattractive conditions in the altered areas.

4.65. The conversion of open grasslands to lagoons and residential uses would alter the visual character of the Unit IV site and introduce structures that would modify views available of the project area. Waterfront views would be created for Bel Marin Keys Unit IV residents but would not generally be available to the public.

4.66. Ignacio Industrial Park. There would be a long-term adverse visual impact from industrial development on presently open, undeveloped land and from the additional traffic and related air pollution resulting from development of Unit 3.

4.67. If lots are sold in such a way that many industrial buildings are constructed, there would be a long-term adverse visual impact from random buildings which can cover 60% of the lot and reach a maximum building height of 50 feet (5 stories).

4.68. Cumulative impacts. Completion of both projects, including existing and future development will almost completely change the visual character of the area (approximately 2,000 acres of land) from open space to urban development.

Impacts on Historical and Archeological Resources.

4.69. Bel Marin Keys. Since there are no known archeological, historical, or paleontological resources at the Unit IV site, there would be no impact unless unsuspected or obscured resources are uncovered during excavation. If project implementation requires removal of the existing buildings on the site, they would be relocated rather than destroyed.

4.70. Ignacio Industrial Park. There would be no impact at the Unit 3 site since there are no known archeological, historical, or paleontological resources present, unless unsuspected or obscured resources are uncovered during excavation.

4.71. Cumulative impacts. Completion of both projects, including existing and future development, will effect approximately 2,000 acres of land. Since a large amount of the area was marshland prior to 1892, the likelihood of the area having supported Indian settlements or campsites is reduced.

4.72. The State Historical Preservation Officer and the National Park Service have been contacted and asked to comment on the effect of the project on the archeological, historical, architectural, and/or cultural resources of the area. Archeological Resource Service conducted an archeological impact evaluation of the two sites on 24 February 1978 (see Document A-14, Appendix A for a copy of the report).

5.00. ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

5.01. Bel Marin Keys. Unit IV impacts would be as follows:

- a. Approximately 150 acres of open space/wildlife habitat will be replaced with urban development. Existing wildlife would be displaced or destroyed.
- b. Seed and hay production on the site would be eliminated.
- c. Existing drainage patterns would be changed.
- d. There will be an increase in noise and air pollution during and after construction, as well as an increase in water pollution and water consumption in a water-short area.
- e. Construction activities on the site would have an adverse visual effect and disturb wildlife adjacent to the site.
- f. Unrecorded archeological sites may be adversely affected by construction activities.
- g. There would be an increase in traffic levels and congestion.

5.02. Ignacio Industrial Park. Unit 3 impacts would be as follows:

- a. Approximately 40 acres of open space/wildlife habitat will be replaced with industrial development. Existing wildlife would be displaced or destroyed.
- b. Slough relocation would remove salt marsh habitat and destroy benthic organisms.
- c. Excavation of the 6-acre knoll would eliminate the animals residing there, upland habitat, and raptor perching sites.
- d. Existing drainage patterns would be changed.
- e. There would be an increase in noise, water, and air pollution during and after construction, as well as an increase in water consumption in a water-short area.
- f. Construction activities on the site would have an adverse visual effect and disturb wildlife adjacent to the site.
- g. Unrecorded archeological sites may be adversely effected by construction activities.
- h. There would be an increase in traffic levels and congestion after the site is developed.

5.03. Cumulative Adverse Effects. Impacts from full development would be as follows:

a. Past, presently proposed, and future development would cause major environmental changes on approximately 2,000 acres of land.

b. During construction activities there would be adverse visual effects due to vegetation and wildlife disruption and the presence of equipment in open space areas, as well as an increase in noise and air pollution levels.

c. After construction there will be long-term impacts related to water and air quality due to increased local traffic and boating, noise, and water supply due to a lack of available water in the area.

6.00. ALTERNATIVES TO THE PROPOSED ACTION

Bel Marin Keys.

6.01. Alternatives available. The two alternatives available to the Corps on the permit application from Jack West are to grant or to deny the permit. The impacts from granting the permit are discussed in other sections of this statement.

6.02. Permit denial. Denial of the permit will retain the land in its present condition. Existing agricultural use would probably continue, and the open space character of the site would continue to conform with the Marin Countywide Plan designation for the area. However, this alternative would mean an economic loss for development interests and a continued tax burden for the residents of Units 1, 2, and 3.

6.03. The alternative of lower-density housing would enable compliance with the Novato Area General Plan. Fewer natural resources would be used, and air, water, and noise pollution would be slightly less. The costs of providing community services would be spread among fewer residents, thus increasing the taxes per resident. A smaller number of dwelling units would mean less profit for development interests unless the price of each unit was increased accordingly, an action that would limit the availability of the housing to those in the higher income levels and that would preclude any lower- or middle-income housing.

6.04. Relocation of Unit IV to another area of the West property would incur the same impacts as the present site, thus providing no advantages to the development interests. The characteristics of the Unit IV site are similar to the rest of the Bel Marin Keys area.

Ignacio Industrial Park.

6.05. Alternatives available. The two alternatives available to the Corps on the permit application from Soiland and Associates are to grant or to deny the permit. The impacts from granting the permit are discussed in other sections of this statement.

6.06. Permit denial. Denial of the permit would mean that no further work would be done on the project site and that the following conditions would exist:

- a. Units 1 and 2 completed,
- b. no fill on the Unit 3 site,
- c. continuation of ponding easement already deeded to Marin County, and
- d. no removal of the hill along Bel Marin Keys Boulevard.

6.07. There are a number of ways in which the alternative of no further development might be carried out. The following options would be available and could be selected singly or in some combination:

a. offering the entire 160 acres as a donation for open space and conservation purposes to the Marin County Open Space District, the Marin County Humane Society, or to the Marin County Flood Control District,

b. offering the land for sale to the above named agencies, or

c. retaining title to the land, but donating or selling a flood-ponding easement to the Flood Control District over the 115 acres not already so dedicated.

6.08. Although this alternative concerns only non-development, there is the option of partial development. Fill could still be excavated from the hill to be used at Unit 2 or to be sold for off-site development. Industrial/commercial development could be proposed on the six-acre hill or on acreage reduced from the 40 acres now proposed for Unit 3.

6.09. Under the above alternative, the site would remain visually the same as it is now, except that Pond 2 (see Figure 2, Appendix C) would fill in the winter, vegetation would be restored around the margins, and Unit 2 would be completed. Water from San Jose and Pacheco Creeks would flow into the existing Pond 2, along the existing slough, and under Bel Marin Keys Boulevard to Novato Creek. Overflows from heavy winter storms would flood the area proposed for Unit 3 and the 76-acre parcel to the northeast.

6.10. Saline-tolerant vegetation would return to the areas where construction activities have left the land bare. Wildlife would continue to use the site, with especially heavy use in the winter by waterfowl. The potential for air pollution, noise, and traffic would be limited to Unit 2 only.

6.11. The potential for employment and additional industrial/commercial space would be eliminated, new community services would not be needed, and property tax benefits would not increase. This alternative would greatly reduce, if not eliminate, development options, thus causing the applicant to lose a potential \$1,000,000 income from the sale of the lots in Unit 3, assuming a price of \$25,000 per acre. Development costs would not occur, and the necessity for the project site to be annexed to the City of Novato would be eliminated. Possible archeologic artifact disturbance would be avoided, particularly on the aforementioned hill.

6.12. Another alternative would be development under the M-3 Master Plan and the related drainage agreement approved by the Marin County Board of Supervisors (see Documents A-9 and A-10, Appendix A for details). Under this alternative the following impacts would result:

a. long-term visual impact from buildings which would extend from San Jose Creek to Bel Marin Keys Unit IV, obstructing views of the flood-ponding area from Bel Marin Keys Boulevard,

b. short- or long-term hydrologic impacts due to increased operational and maintenance costs associated with the required water-pumping station,

c. significant adverse impact on vegetation and wildlife due to a larger reduction in wildlife habitat,

d. additional air quality, noise, and traffic impacts due to the larger development,

e. possible disturbance of archeologic artifacts, and

f. an industrial/commercial development of 102 acres instead of 40 acres, resulting in approximately 1,600 jobs instead of 800 and causing a significant increase in the demand for community services, a decrease in fiscal benefits to taxpayers, and a growth-inducing effect.

6.13. The alternative of development under the original master plan was considered by the applicant and is discussed in Appendix C. The applicant did not consider upland sites for housing developments because the housing proposal is water-oriented. The developer was not able to find available upland sites in the area for industrial development. There are other lowland areas available. However, these areas would have been even greater wetland problems than the selected sites.

7.00 THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE OF LONG-TERM PRODUCTIVITY

7.01. Bel Marin Keys. Man's short-term uses of this site would be for housing, recreation, commercial, and industrial activity. Short-term benefits of the proposed project include an increase in local business activity and stimulation of the construction industry.

7.02. The environmental cost of changing the current land use of the site and providing the above benefits would be the use of the natural and man-made resources discussed in sections 5.00 and 8.00 of this Environmental Statement.

7.03. Use of the project site for urban development will remove the option of restoring approximately 99 acres of land to highly productive marshlands and mudflats which support wildlife in the Bay Area.

7.04. Urban usage of the area, which is within an inferred fault zone, may create health, safety, and evacuation problems in the event of an earthquake.

7.05. Ignacio Industrial Park. The short-term use of this land for an industrial park is to be weighed against the long-term productivity of an alluvial flood plain which provides flood-ponding capacity, open space, and habitat for wildlife.

7.06. The environmental cost of changing the current land use of the site and providing the benefits of commercial and industrial development would be the use of the natural and manmade resources discussed in sections 5.00 and 8.00 of this environmental statement.

7.07. Commitment of the 45-acre portion of the site for industrial and commercial development removes the option for enhancing the quality of all of the approximate 160-acre site for wildlife now or in the future. Also precluded is the option of returning that portion of the 45-acre site that is below MHHW to tidal action.

7.08. Industrial and commercial usage of the area, which lies within an inferred fault zone, may create and/or compound health, safety, and evacuation problems in the event of an earthquake.

7.09. Cumulative Relationship. Full development of the Novato Creek flood plain represents the short-term use gains of providing housing, recreational lagoons, and industrial areas on approximately 2,000 acres of land at the expense of long-range biological productivity.

7.10. The proposed development is adjacent to several valuable wildlife habitat areas such as south along San Pablo Bay. Development would degrade these areas and possibly effect the endangered salt marsh harvest mouse and California clapper rail.

7.11. The option of returning a large portion of the area to tidal action would be precluded should total development of the area take place. In addition, development in the inferred fault zone will increase the risk of public safety and health.

8.00. ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

8.01. Bel Marin Keys. The time, energy, labor, and other resources utilized in construction, operation, and maintenance of 158 new dwelling units, the lagoon system, and ancillary facilities would irretrievably commit those resources to the project area.

8.02. The project site would be irreversibly committed to residential usage at the expense of wildlife habitat, existing wildlife, and agricultural usage.

8.03. Grading, excavation, filling, and vegetation removal would irreversibly change the character of the wildlife habitat on the site, and the 1,000,000 cubic yards of fill will be irretrievably committed to the project site.

8.04. Ignacio Industrial Park. The time, energy, labor, and other resources utilized in the construction, operation, and maintenance of the proposed industrial/commercial development would irretrievably commit those resources to the project area.

8.05. The project site would be irreversibly committed to industrial/commercial usage at the expense of wildlife habitat, existing wildlife, and open space.

8.06. Construction would irreversibly change the character of the wildlife habitat on the site, and the 455,000 cubic yards of fill would be irretrievably committed to the project site.

8.07. Cumulative Commitment of Resources. Past, currently proposed, and future development of the area would irretrievably commit approximately 2,000 acres of the Novato Creek flood plain to urban usage.

8.08. The use of building materials, energy, and transportation resources used in construction would irretrievably commit those resources to the project area.

8.09. There would be an increase in energy consumption and corresponding waste generation.

8.10. Unrecorded sites of historic or archeologic interest may be destroyed or disturbed should development take place in the area.

8.11. Existing vegetation, wildlife, and habitat utilized by migratory waterfowl would be eliminated or greatly reduced by construction in the area.

9.00. COORDINATION AND COMMENTS AND RESPONSES

Bel Marin Keys.

9.01. Public participation. The application for a Department of the Army permit by Jack West was first announced by the San Francisco District in Public Notice No. 9617-33, 26 February 1976 (Document A-3, Appendix A). Comments were solicited from the general public as well as Federal, State, and local agencies. Current regulations state that "...public hearings will be held upon written request whenever the District Engineer determines that there is sufficient public interest to warrant such action" (Department of the Army, 1975). No public hearing has been held by the Corps of Engineers.

9.02. Government agencies. Comments on the Public Notice announcing the permit application are required from the U.S. Department of the Interior, U.S. Department of Commerce, U.S. Environmental Protection Agency, and the California State Resources Agency.

9.03. The U.S. Department of the Interior, U.S. Department of Commerce, and U.S. Environmental Protection Agency deferred comment pending review of the Draft Environmental Statement. The California Resources Agency indicated that the permit should not be issued until the Department of Fish and Game had reviewed and commented on the Draft Environmental Statement, a Certification of Conformance with water quality standards had been granted by the State Water Resources Control Board, and a dredging permit obtained from the State Lands Division for the use of sovereign lands involved in the proposed project. In addition to the above agencies, the U.S. Department of Transportation, Coast Guard, and the Marin County Department of Public Works commented on the Public Notice. The U.S. Coast Guard recommended that barge pump-out facilities and/or oily water separators be incorporated in the proposed project. The Marin County Department of Public Works requested that the Corps withhold action on this permit until the County had completed its permit procedures regarding the property.

9.04. In response to the provisions of the California Environmental Quality Act (CEQA), California Public Resources Code, Sections 21000 to 21553 as amended by A.B. 889 (1972), the applicant prepared an Environmental Impact Report (Appendix B) which was made available to the required agencies and public interest groups. Comments concerning the Environmental Impact Report are found in the "Addenda" section of Appendix B.

9.05. Citizen groups. The major interests indicated in comments received on the Public Notice announcing the permit application were related to the use of agricultural land for urban development, returning

the area to tidal action, the questionable value of the lagoons as wildlife habitat, and the proximity of this project and future development to the San Pablo Bay Wildlife Area. The California Waterfowl Association and the Marin Audubon Society responded to the Public Notice.

Ignacio Industrial Park.

9.06. Public participation. The application for a Department of the Army permit by Soiland and Associates was first announced by the San Francisco District in Public Notice No. 10906-33, 1 March 1976 (Document A-4, Appendix A). In accordance with Department of the Army (July 1975) Regulations, comments were solicited from the general public as well as Federal, State, and local agencies. Current regulations state that "...public hearings will be held upon written request whenever the District Engineer determines that there is sufficient public interest to warrant such action" (Department of the Army, 1975). No public hearing has been held by the Corps of Engineers.

9.07. Government agencies. Comments on the Public Notice announcing the permit application are required from the U.S. Department of the Interior, U.S. Department of Commerce, U.S. Environmental Protection Agency, and the California State Resources Agency.

9.08. The U.S. Department of the Interior, U.S. Department of Commerce, and U.S. Environmental Protection Agency deferred comment pending review of the Draft Environmental Statement. The California State Resources Agency indicated that a permit should not be issued until the Department of Fish and Game has resolved its concerns associated with the Novato Creek Flood Control Project, a Certification of Conformance with water quality standards has been granted by the State Water Resources Control Board, and a dredging permit obtained from the State Lands Division for the use of sovereign lands involved in the proposed project. In addition to the above agencies, the Marin County Department of Public Works had commented on the Public Notice. The County indicated that prior to any construction on the site, additional, more detailed plans and engineering data will be required and appropriate conditions would be imposed.

9.09. In response to the provisions of the California Environmental Quality Act (CEQA), California Public Resources Code, Sections 21000 to 21553 as amended by A.B. 889 (1972), the applicant prepared an Environmental Impact Report (Appendix C) which was made available to the required agencies and public interest groups. Comments concerning the Environmental Impact Report are found in the "Comments and Responses" section of Appendix C.

9.10. Citizen groups. The major interests indicated in comments received on the Public Notice announcing the permit application were related to the disturbance and loss of wildlife habitat and the protection and access to electric transmission line towers in the area to be excavated. The Marin Audubon Society and the Pacific Gas and Electric Company responded to the Public Notice.

Comments and Responses.

9.11. General. The questions and issues raised in the Draft Environmental Statement are summarized and responded to in this section. For ease of reference to pertinent parts of this report, the questions and issues generally follow the topical outline of this report.

9.12. If the comment requires a change in the text of this environmental statement or if the response is contained within revised sections of this environmental statement, the appropriate paragraph or appendix is referenced in response.

9.13. Copies of all correspondence from agencies, groups, and individuals received in response to the Draft Environmental Statement are found in Appendix D.

9.14. Concerns related to project description.

Comment by: The Resources Agency of California
U.S. Department of the Interior

Comment: The Bel Marin Keys portion of the project raises some major environmental concerns. The fish and wildlife mitigation proposals do not adequately compensate for wildlife losses associated with Unit IV development.

Response: The applicant is currently working on a wildlife compensation plan, involving a possible return to tidal action of some of the applicant's property adjacent to San Pablo Bay, with the U.S. Fish and Wildlife Service and the California Department of Fish and Game. A final plan would be required prior to final permit action on the Bel Marin Keys portion of the project.

Comment by: U.S. Department of the Interior

Comment: The statement indicates that a "pleasure isle" will be provided in the new lagoon. However, past experience in the community indicates that these "islands" do not receive much public use without the provision of electric power and domestic water. These utilities should be provided underground at the time of lagoon construction.

Response: The "pleasure isle" has been proposed for low-intensity recreational use as well as aesthetic and wildlife enhancement. The provision of utilities would be contrary to the intended use of the island. None would be provided.

9.15. Concerns related to hydrology.

Comment by: The Resources Agency of California

Comment: Portions of U.S. Route 101 and State Route 37 in the vicinity of the project are low-lying. Potential flooding is sensitive to the water stages in Novato, San Jose, and Pacheco Creeks where they cross under the roadways. The project proposes drainage changes such as filling, pond construction, pumping, and channel changes. The FES should discuss the effect of these changes upon stages in the creeks at the roadway crossings. This should include the cumulative effect of future projects in the area.

Response: Bel Marin Keys Unit IV, Ignacio Industrial Park Unit 3, and future projects in the area would be designed and constructed in accordance with development ordinances of Marin County and, where applicable, the City of Novato. There would be no significant additional effect upon water levels in the creeks at the roadway crossings, according to Lewis Frederickson, Assistant Flood Control Engineer, Marin County. It should be noted that the waterway traversing Unit 3 will not be rerouted as previously planned.

Comment by: U.S. Department of the Interior

Comment: The flood potential for the project is not clearly described. The Bel Marin Keys area is subject to flooding but the frequency of flooding is not estimated. Apparently, hydrologic studies have not been completed by the developer. The Ignacio Industrial Park Unit 3 site would be protected from a 100-year storm according to the applicant's calculations. However, in a review of the EIR included under Appendix C, the Corps of Engineers arrived at a higher stage for the 100-year event. The final statement should include an up-to-date appraisal of the flood potential of both sites.

Response: Hydrologic studies by the Corps did arrive at a higher stage (+8 feet above MHHW versus +7 feet) for the Unit 3 site. Marin County has recommended that minimum floor elevations be +8.25 feet rather than +8 feet. This new figure will be incorporated into the design elevations. The Bel Marin Keys Unit IV site would be protected from a 100-year storm using a +7-foot post-settlement elevation, which is lower than Ignacio Industrial Park's Unit 3 elevation due to different hydrologic systems (San Francisco Bay versus San Jose Creek, respectively). See paragraph 4.16 for additional information.

9.16. Concerns related to water quality.

Comment by: The Resources Agency of California

Comment: Mitigation measures to reduce the pollutants in the runoff should be included in the appropriate section of the FES.

Response: Given the controls on future uses in the industrial park, runoff contaminants should be limited to those related to vehicles. Petroleum products would be washed from paved areas into San Jose Creek and, in turn, into the wildlife area. Since San Jose Creek also carries runoff from U.S. Route 101 and a large residential area, the incremental pollutant quantity contributed by the Ignacio Industrial Park Unit 3 project would be a very small percentage of the pollutants presently flowing into San Jose Creek. No mitigation is proposed.

Comment by: U.S. Department of the Interior

Comment: The DES describes the impacts of groundwater on the project. However, we feel the statement should consider impacts on groundwater (and ultimately on the lagoons) from polluted runoff. A brief description of the local occurrence of groundwater would be helpful.

Response: The Unit IV site is underlain by approximately 60 feet of soft, unconsolidated silty clays and sands containing vegetative remains. While this material and the alluvium beneath it contain water, the marsh deposits are not regarded as an aquifer; consequently there would be no connection between the deposits and groundwater in the underlying alluvium. See page 10, Appendix B for the impact of runoff on the lagoons.

9.17. Concerns related to air quality.

Comment by: Bay Area Air Pollution Control District
U.S. Environmental Protection Agency

Comment: The Air quality data appears to be inadequate in terms of quantifying emissions associated with the project, the project and adjacent development, and Federal air quality standards. A status report on the AQMP should be included in the FES.

Response: See Document A-15, Appendix A for details.

Comment by: The Resources Agency of California

Comment: While it may not be possible to precisely quantify emissions related to the industrial park, it is suggested that "light industry" needs to be more specifically defined and that specific emission levels, established to help guide industrial development which is compatible with air quality needs, be cited.

Response: Control over the type of development permitted in Ignacio Industrial Park is set forth in the terms and conditions of the M-3 Master Plan, approved by the County of Marin. The specific conditions related to air quality are (1) smoke of a shade as dark or darker than that designated as No. 2 on the Ringleman Chart, as published by the U.S. Bureau of Mines, for a period aggregating more than three minutes in any one hour; (2) obnoxious odors; (3) noxious, toxic, or corrosive fumes or gasses; and (4) dust, dirt, or fly ash. Any industrial operation on any site within the development would be performed or carried out within a building that is designed and constructed so that the enclosed operations and uses do not cause or produce any of the above effects, which would be discernible at any property line or would affect any adjacent property. These performance standards would be incorporated in the Restrictions and Covenants for Ignacio Industrial Park Unit 3. An indication as to the type of development anticipated can be made from the development status of Ignacio Industrial Park Units 1 and 2. A recent survey of these projects indicated a multitude of uses including professional offices, retail sales, various repair shops, and light manufacturing facilities.

Comment by: U.S. Environmental Protection Agency

Comment: Although the DES briefly mentions the AQMP, the FES needs to include a status report, as well as how the OPR and ABAG industrial siting study would potentially affect this project. The FES should also indicate whether the ABAG (Series 3) population projects are consistent with development in this area.

Response: The current Air Quality Maintenance Plan contains three recommendations for controls: stationary sources, mobil sources, and transportation. Stationary sources would be controlled by a new source review and by the best available control technology for new and existing industries, both to be carried out by the BAAPCD. The M-3 Master Plan, under which development would be controlled, incorporates by reference the regulations of the BAAPCD. These regulations include New Source Review Rules, adopted 20 December 1977. Mobil sources and transportation source controls are not applicable to either project. The OPR and ABAG industrial siting study would not affect the Ignacio Industrial Park Unit 3 project because its 40-acre size is less than the minimum size (50 acres) designated by the study.

9.18. Concerns related to community services.

Comment by: U.S. Department of Health, Education, and Welfare

Comment: The DES states that there will be a total increase of 256 students as a result of the proposed residential development. The DES also indicates that the schools are nearing capacity and that

within two years the high school will exceed capacity. With the expected increased student loads generated by the project and those of future developments as a result of the project, assurances should be made by the elementary and high school districts that the new student load can be adequately provided for.

Response: The Novato Unified School District has indicated that there would be no problem in accommodating these students.

Comment by: U.S. Department of Health, Education, and Welfare

Comment: The County of Marin is currently experiencing a critical water shortage. The proposed project will significantly increase the demand for domestic water. The DES does not provide any assurance that water service can be provided to the Unit IV and Unit 3 developments.

Response: The North Marin County Water District has indicated that the two proposed developments can be supplied with water service.

Comment by: The Resources Agency of California

Comment: The FES should discuss the impact of the Bel Marin Keys Unit IV development and of any proposed future housing developments in the immediate vicinity on the potential for wastewater reclamation alternatives proposed by the Novato Sanitation District. At present, the District is contemplating a wastewater disposal scheme that involves a reclamation alternative.

Response: The wastewater reclamation alternative that would be pertinent to Bel Marin Keys Unit IV and future housing developments in the immediate vicinity would be the disposal of wastewater by forage crop irrigation. This alternative is presently being used on part of the land at the project site and is one of several being considered by the District; none has been evaluated in terms of cost effectiveness. The proposed project would eliminate 99 acres as a disposal site, which is less than five percent of approximately 3,000 acres of potential land for this use. The present effluent quantity can be disposed of on other land downstream and, therefore, the impact of the project would be to require use of other available areas for wastewater disposal. Future Bel Marin Keys units will encompass an additional 1,039 acres including acreage to be used for wildlife habitat mitigation. The construction scheduling of the remaining units is post 1981. By that time, if the District decides to use this reclamation method, it will have made agreements with property owners, and future development will be subject to the conditions of the agreement.

Comment by: U.S. Department of Health, Education, and Welfare
U.S. Department of the Interior

Comment: It is unknown at this time whether the Novato Sanitary District will be able to provide service to the Unit IV development. Annexation of Unit IV to the city would be required prior to servicing. What assurance has been received that the City of Novato would approve such annexation? What alternative servicing will be provided should the City of Novato refuse the annexation?

Response: The Bel Marin Keys Community Services District has indicated that annexation to the City of Novato is not required as a condition for providing service. The Novato Sanitary District No. 6 is under Marin County's auspices, not the city's. The Sanitary District has indicated that the proposed development is already within its boundaries and that there should be no problem in providing the required service.

Comment by: U.S. Department of the Interior

Comment: The DES indicates that there will be additional recreational facilities provided by the project. However, the statement does not indicate if it is to be provided by the county, the Community Services District, or the developer. The statement indicates that the Community Services District will maintain the facilities. It is suggested that this discussion be clarified.

Response: Within the perimeter of the recorded maps, new recreational facilities will be provided by the developer and maintained by the Community Services District.

9.19. Concerns related to transportation.

Comment by: The Resources Agency of California

Comment: Traffic generated by the proposed developments will have a significant adverse effect on the Bel Marin Keys Boulevard-Nave Drive-U.S. Route 101 off-ramp intersection, since delays and congestion are occurring at this intersection under existing traffic conditions. However, the DES does not provide a valid analysis of existing, plus project-generated, peak hour traffic at the intersection which would show the extent of the impact.

Response: See paragraph 4.55 ff and Table 1 for the revised traffic data. Sections of Bel Marin Keys Boulevard would be widened from two-lane capacity to four-lane capacity and, providing the Ignacio Boulevard-U.S. Route 101 interchange is modified (affecting the existing Nave Drive intersection configuration), vehicular increases could be accommodated, with a resultant change in the service level (from D to C).

Comment by: The Resources Agency of California

Comment: The DES does not take into account traffic generated by any future Bel Marin Keys units. The map on page A-18, Volume 2 shows that existing development plus Unit IV of the Bel Marin Keys development is less than one-half of the total proposed development. It is our opinion that the cumulative impact of the whole development should be commented on.

Response: The size of the proposed overall development has been substantially reduced from 2,500 residential units to 1,441 units. Therefore, the cumulative traffic impact would be considerably reduced. See paragraph 4.55ff and Table 1 for the revised traffic data. However, modification of the existing roadways would still be necessary to reduce the potential vehicular congestion at full development.

Comment by: U.S. Department of Transportation, Federal Highway Administration

Comment: The only vehicular access route serving the project area is Bel Marin Keys Boulevard, a two-lane road. Paragraph 4.56 of the Draft Environmental Statement indicates that the cumulative effect of the two projects addressed in this DES and of six other projects approved or under construction in the same area would create a traffic volume of 2,457 vehicles per peak hour and that full development of Bel Marin Keys would more than double this traffic. As discussed in paragraph 4.57, Marin County requires roadway improvement when traffic flow conditions exceed Service Level D. The Federal Highway Capacity Manual states that the maximum service volume on a two-lane highway under ideal conditions for Level of Service D is 1,700 vehicles per hour. Therefore, it is apparent that the capacity of Bel Marin Keys Boulevard would be exceeded, resulting in extreme traffic congestion, and roadway improvement would be required by Marin County.

Response: See paragraph 4.55, which now reflects the reduced scale of the Unit IV development (158 residential units versus 366), as well as paragraph 4.56, which reflects the reduced scale of future Bel Marin Keys development (1,441 residential units versus 2,500). The Ignacio Industrial Park development remains unchanged in scale. Traffic volumes per peak hour would still exceed Service Level C at full development, requiring roadway improvements as indicated in paragraph 4.57.

Comment by: U.S. Department of Transportation, Federal Highway Administration

Comment: Bel Marin Keys Boulevard is on the Federal-Aid Highway System and is eligible for Federal highway funds. It is apparent that some roadway improvement will be needed. As lead agency the Corps of Engineers should consider addressing the environmental effects

of the required roadway improvements in the Bel Marin Keys-Ignacio Industrial Park DES. This procedure will avoid DES duplication if and when Federal Highway Administration funds are requested for the roadway project. This will become especially important since the required roadway project appears to require a Corps of Engineers Section 404 permit.

Response: Widening of Bel Marin Keys Boulevard would cause construction-related air, water, and noise pollution, as well as the possible destruction of a salt-marsh habitat along the existing roadway near the northwest corner of Unit 3, depending on the roadway's final alignment. Until actual plans for the widening of the roadway are formulated, a detailed analysis of the impacts is not feasible due to a lack of specific information.

Comment by: Regional Airport Planning Committee

Comment: The Committee found the following with respect to the proposed Bel Marin Keys Unit IV residential development project: That the project is inconsistent with the Regional Transportation Plan as it relates to the future operation of Hamilton Air Force Base; that the DES is deficient in the areas of aviation noise and safety; that the Corps should deny the dredging permit for the reasons indicated above; and that the project sponsor be notified of the need to reconcile the apparent conflict between his residential plan and the policies of the Regional Transportation Plan.

Response: The applicant has satisfied the Committee's concerns. See Document A-12, Appendix A for the letter by the Regional Airport Planning Committee withdrawing its objection.

9.20. Concerns related to archeological resources.

Comment by: U.S. Department of the Interior

Comment: It is suggested that the statement provide more information on the cultural resources in the project areas. The effects of the proposed projects upon cultural resources cannot be evaluated without documentation of precisely what areas were examined.

Response: See Document A-14, Appendix A for a report by Archaeological Resource Service describing its archeological impact evaluation of the two project sites, conducted on 24 February 1978. There would be no significant impact on cultural resources from the two projects.

9.21. Concerns related to alternatives.

Comment by: U.S. Environmental Protection Agency

Comment: The discussion in the DES regarding alternatives should be expanded. The DES on page C-103 indicates that a number of alternatives had been under consideration but were later eliminated. Since the purpose of an ES is to provide information and to assure that environmental factors are included in the decision-making process, this DES needs to describe the alternatives that were considered and discuss why they should be rejected. The description should include the relative air quality impacts per alternative.

Response: Alternatives considered for the Ignacio Industrial Park Unit 3 project consisted of (1) residential use, (2) agricultural use, (3) flood-tolerant commercial use, and (4) no further development or development under the original master plan. These alternatives were rejected in favor of the proposed project on the basis of the economic return to the owners. The relative air impact of the alternatives would have been low for no further development and agricultural use, increasing for residential use, and high for the proposed project and development under the original master plan.

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TABLES

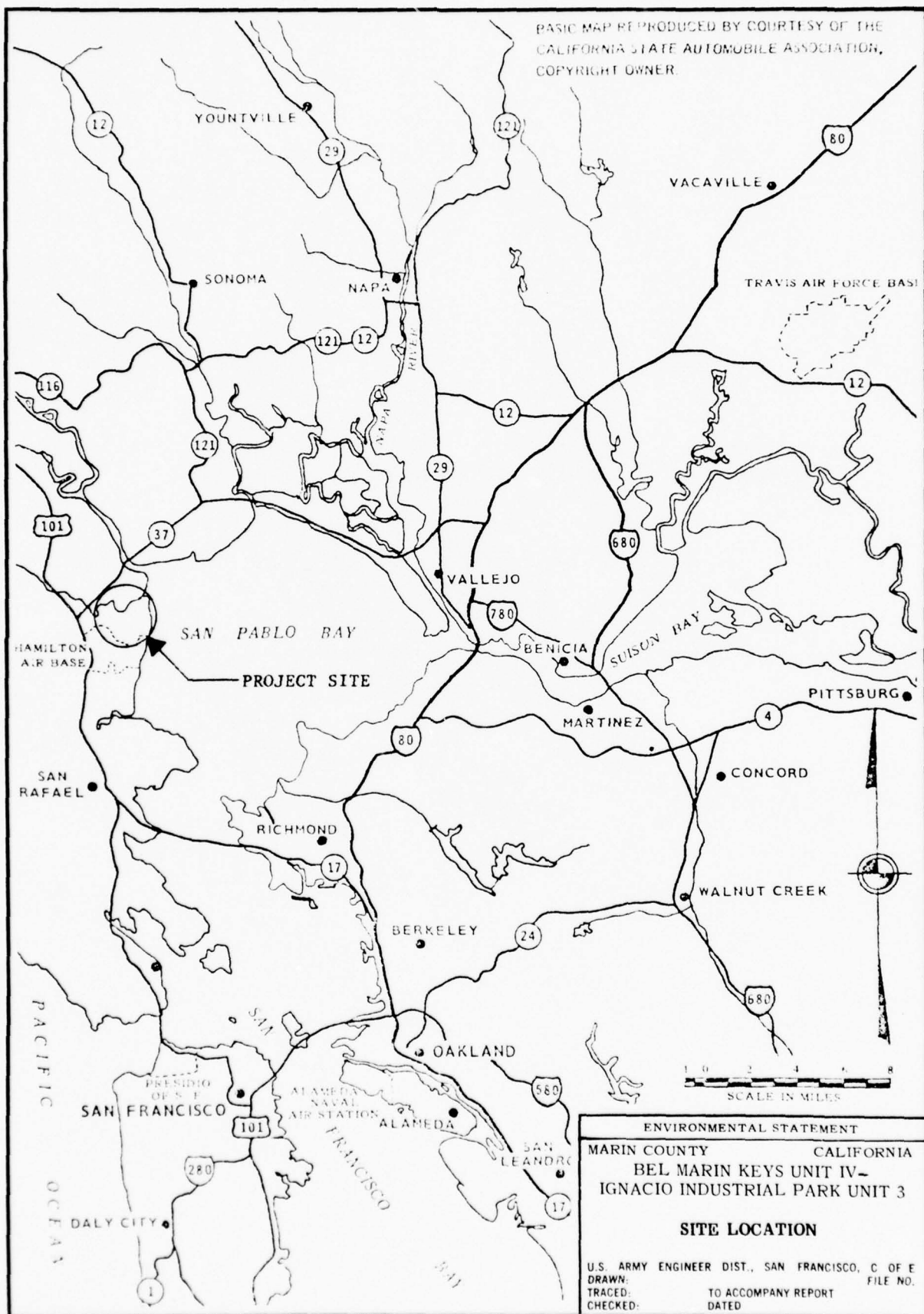
TABLE 1

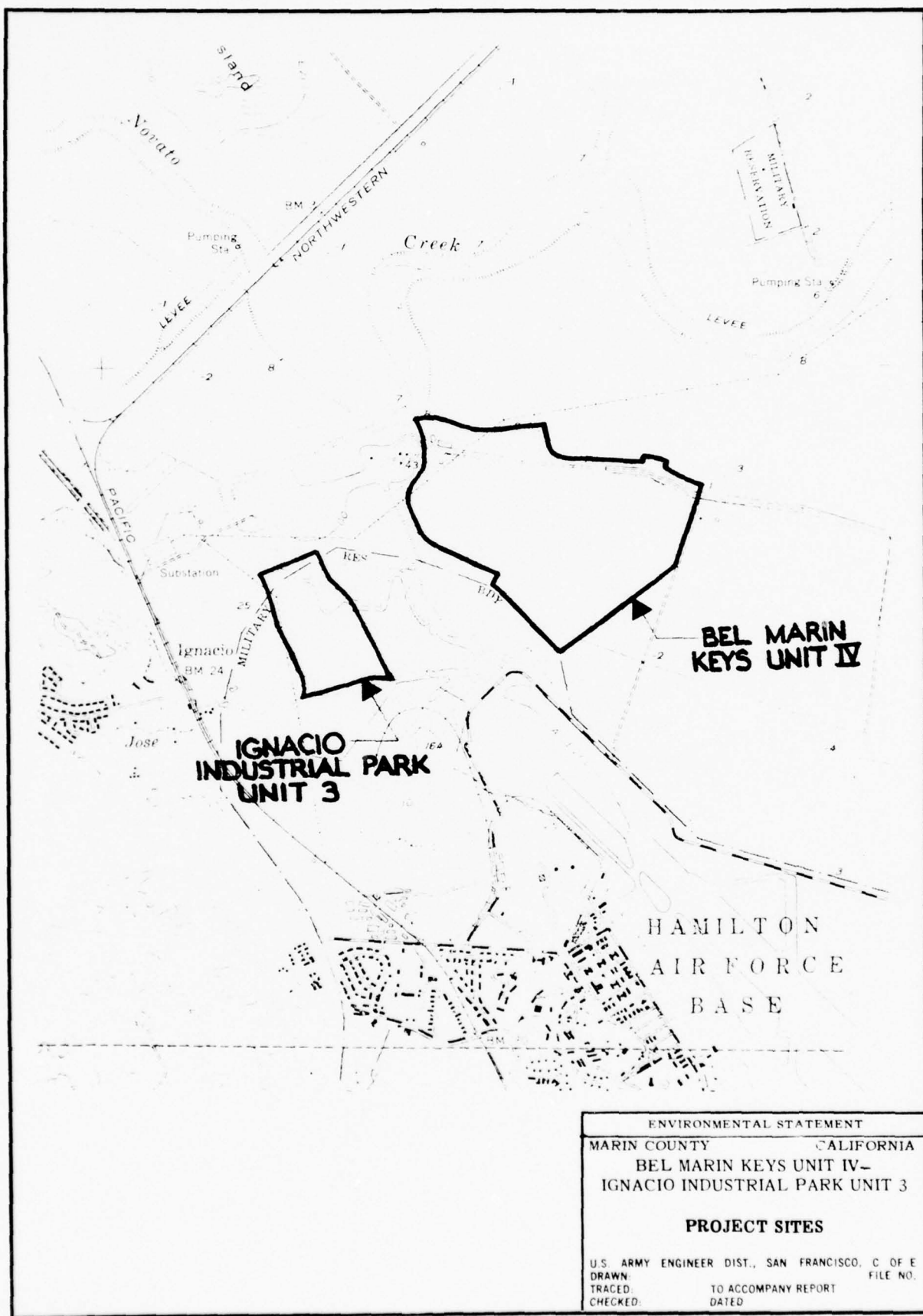
REVISED TRAFFIC DATA
(Number of Vehicles)

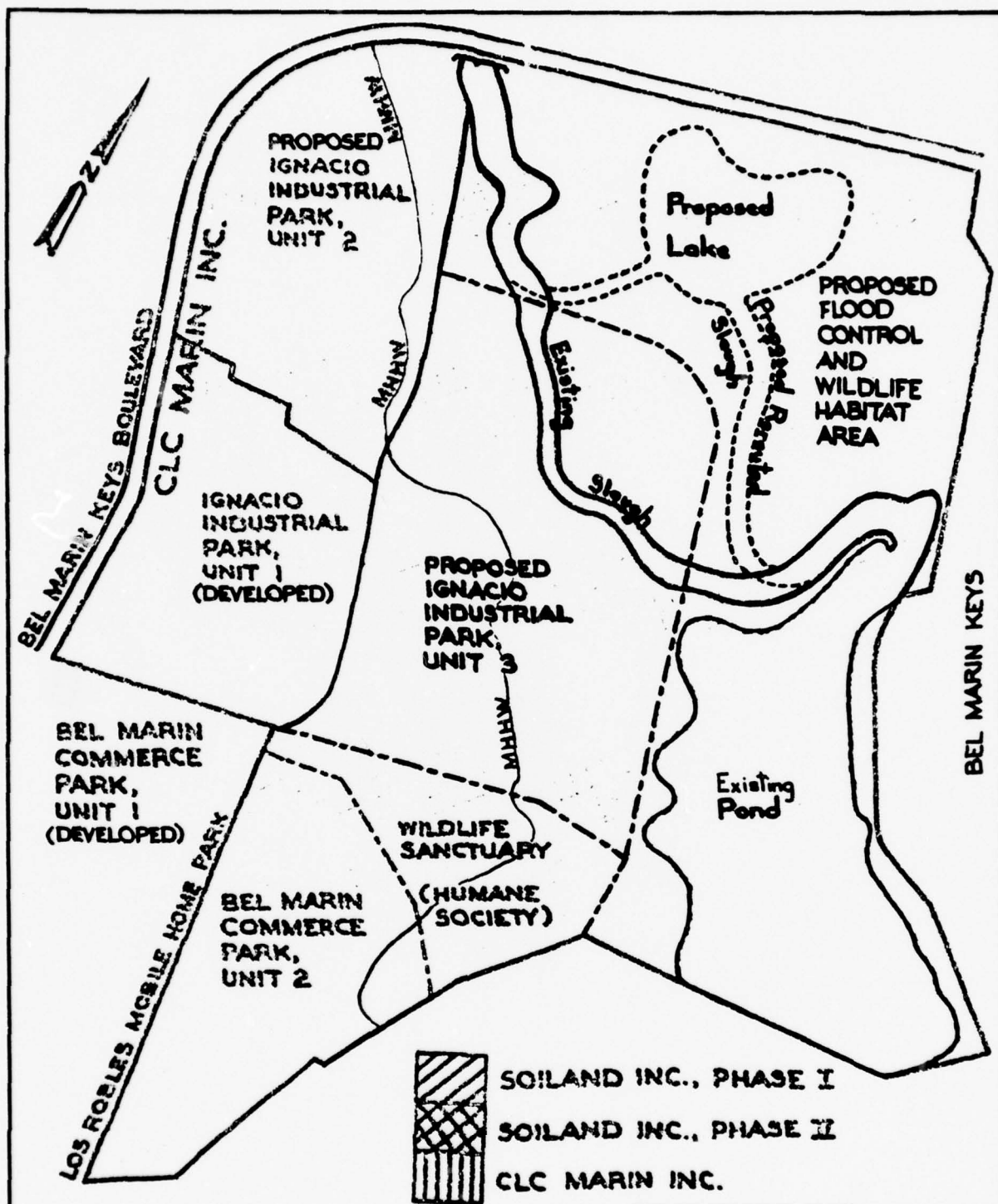
	<u>Daily</u>	<u>Peak Hour</u>
Existing Development	6,444	620
Laguna Keys; Bel Marin Commerce Park Units 1 and 2; Ignacio Industrial Park Units 1 and 2; and The Landing	15,551	1,556
Ignacio Industrial Park Unit 3	2,440	500
Bel Marin Keys Unit IV	1,590	159
Future Bel Marin Keys Commercial and Residential Development	<u>16,820</u>	<u>1,282</u>
	42,805	4,117

SOURCE: James Robertson, Transportation Engineer, Marin County

PLATES







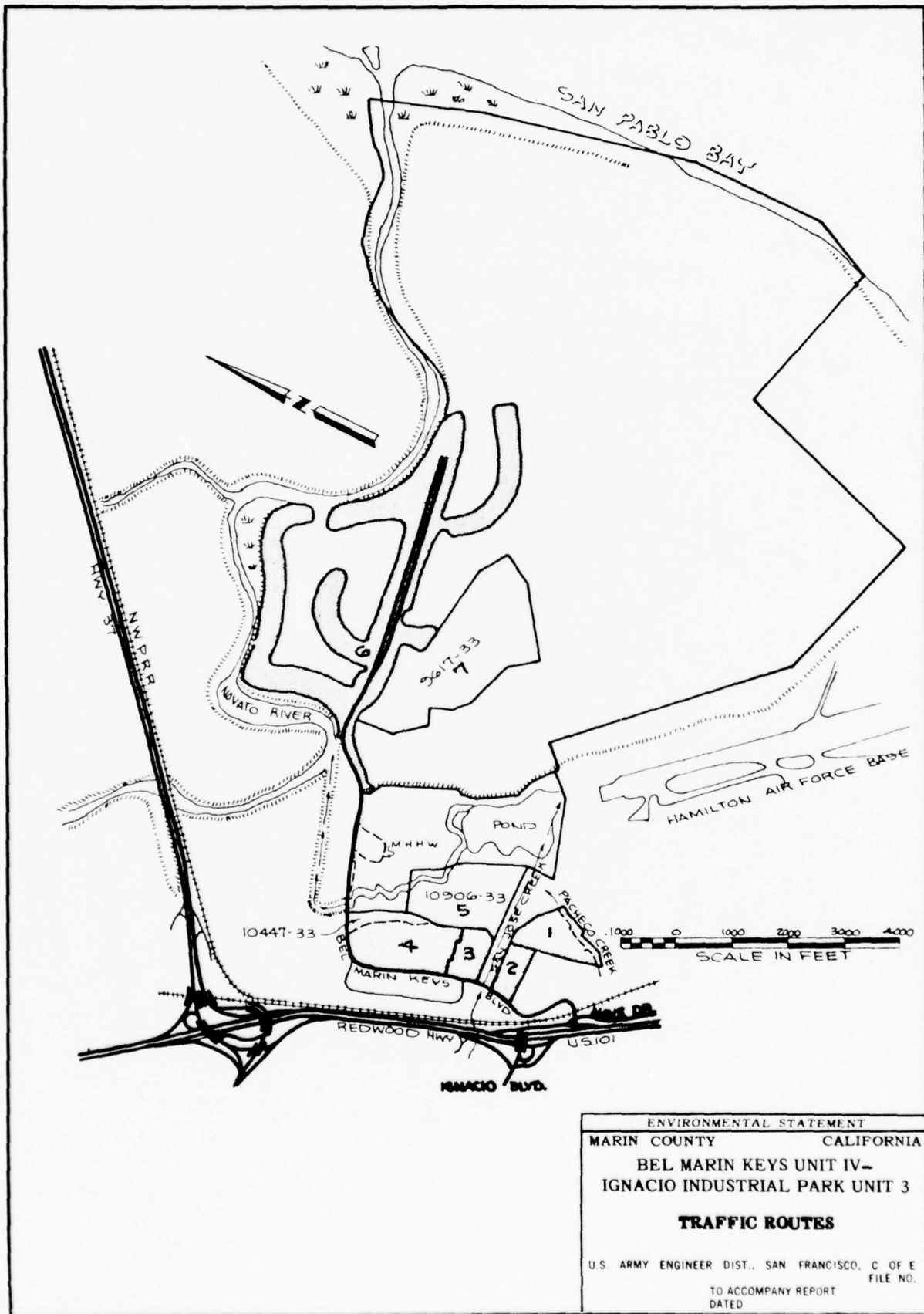
NOT TO SCALE

ENVIRONMENTAL STATEMENT

MARIN COUNTY CALIFORNIA
 BEL MARIN KEYS UNIT IV-
 IGNACIO INDUSTRIAL PARK UNIT 3

ADJACENT SITES

U.S. ARMY ENGINEER DIST., SAN FRANCISCO, C. OF E.
 DRAWN: TO ACCOMPANY REPORT
 TRACED: FILE NO.
 CHECKED: DATED



APPENDIX A

MISCELLANEOUS SUPPORTING DOCUMENTS

Appendix A was distributed with the Draft Environmental Statement and therefore only those documents added since distribution are included. Copies of the original documents are available from the San Francisco District on request.

APPENDIX A

MISCELLANEOUS SUPPORTING DOCUMENTS

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APPENDIX A
MISCELLANEOUS SUPPORTING DOCUMENTS

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REGIONAL AIRPORT PLANNING COMMITTEE

July 11, 1977
1101-01-01

Brigadier General Richard Connell
Division Engineer
Army Corps of Engineers
630 Sansome Street
San Francisco, California 94111

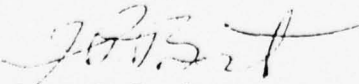
Dear General Connell:

On March 25, 1977, the Regional Airport Planning Committee recommended that the Corps of Engineers deny the dredging permit for the Bel Marin Keys IV development in Marin County because it would jeopardize the future use of Hamilton airfield for aviation purposes. The Committee has met on two subsequent occasions to consider this matter. Also, the Committee's staff and legal counsel have met with the developer to explore several feasible solutions to the problem (please refer to June 20, 1977 letter from MTC staff).

The developer has been very cooperative in the formulation of mutually satisfactory solutions, and it now appears that the Committee's original concerns can be resolved. The developer has agreed to incorporate a Statement of Disclosure in the deed of sale notifying potential property owners of future aviation activity levels at Hamilton airfield. The developer has also agreed to the concept of a conditional noise easement which would be granted to the Hamilton airport operator should certain specified noise levels occur in the new development.

This letter is to advise you that on July 1, 1977 the Committee voted to withdraw its earlier recommendation subject to a final determination by staff and legal counsel as to the acceptability of the language and procedures for implementing the above mentioned solutions. Should you have any further questions, please call either myself or Chris Brittle (MTC Staff Liaison - 849-3223, ext. 30).

Sincerely,



Joseph P. Bort
Chairman

CB/ck
cc: Robert Friese

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

Airport District Office
831 Mitten Road
Burlingame, CA 94010



MAR 15 1978

Colonel John M. Adsit
Department of the Army
Corps of Engineers
630 Sansome Street
Room 1216
San Francisco, CA 94111

Subject: Bel Marin Keys Unit IV - Ignacio Industrial Park Unit 3;
Draft Environmental Impact Statement, our comments of April 1,
1977

Dear Colonel Adsit:

Having satisfactorily concluded lengthy coordination between the project proponent, the Bay Area Metropolitan Transportation Commission (MTC) and FAA, we are withdrawing our objections to the proposed action.

Our intention to withdraw objections to this action are contingent upon the proponent's commitment to implement the following remedial program:

1. A perpetual noise pollution deed restriction shall be granted to Marin County by each property owner and successor owner within the proposed Bel Marin Keys Unit IV subdivision. An acceptable format for the deed restriction, as drafted by MTC, is offered as Attachment A to this letter.
2. All potential occupants of residential units within the proposed subdivision shall be notified of potential aircraft noise intrusion due to the proximity of Hamilton Airport, (formerly Hamilton AFB). A sample statement of disclosure prepared by MTC is offered as Attachment B to this letter.

We request that upon development of Bel Marin Keys Unit IV, evidence of compliance with the above remedial program be provided to this office.

Thank you for your consideration of these requests.

Sincerely,

A handwritten signature in cursive script, appearing to read "Frederick M. Isaac", is written over the typed name.

FREDERICK M. ISAAC
Chief, Airport District Office, SFO-600

Enclosure

cc:
MTC

SAMPLE NOISE EASEMENT
TO BE INCLUDED IN DEED

This indenture made this _____ (date) _____ between
_____, hereinafter referred to as
Grantor, and the County of Marin, owner of Hamilton Airport,
hereinafter referred to as Grantee.

The Grantor, for and in consideration of _____ zero
Dollars (\$ 0.00) the receipt and sufficiency of which are
hereby acknowledged, does hereby grant to the Grantee, its
successors and assigns, a perpetual and assignable noise ease-
ment over the following described parcel of land in which the
Grantor holds a fee simple estate, designated as Parcel 1,
generally lying one mile north of the runway of Hamilton Airport.

Parcel 1

()
()
(Description)
()
()

The Grantor agrees that they, their heirs, successors and
assigns, shall for the use and benefit of the public, grant
the right of flight for the passage of aircraft in the airspace
above the referenced parcel, together with the right to cause
in said airspace such noise as may be inherent in the operation
of aircraft, now known or hereafter used for navigation of or
flight in air, using said airspace or landing at, taking off from

A-71
Attachment A

or operating on Hamilton Airport.

TO HAVE AND TO HOLD said easement and all rights appertaining thereto unto the Grantee, its successors and assigns, until said Hamilton Airport shall be abandoned and shall cease to be used for public airport purposes.

IT IS UNDERSTOOD AND AGREED that these covenants and agreements shall run with the land and shall be binding upon the heirs, administrators, executors, successors, and assigns of the Grantor.

IN WITNESS WHEREOF, the Grantor has hereunto set his hand and seal this _____ (date) _____.

/s/ _____ John R. Jones _____

/s/ _____ Mary E. Jones _____

(Seal, attestation and acknowledgement
to be in accordance with laws of state
in which land is located)

SAMPLE OF STATEMENT OF DISCLOSURE

TO BE FILED WITH COUNTY

Potential owners of houses in the Bel Marin Keys IV housing development within the unincorporated areas of Marin County and adjacent to Hamilton Airport are hereby notified of the following:

- 1) That Hamilton Airport, located approximately one (1) mile south of the referenced housing development, shall remain in public use as an airport for an indeterminate length of time; and
- 2) That regional plans prepared by the Metropolitan Transportation Commission and Association of Bay Area Governments have contemplated the use of Hamilton Airport for commercial airline flights to Southern California as well as other cities within California; and
- 3) That the operation of aircraft taking off or landing at an airport or maneuvering on the airport produces noise that may be objectionable to some persons living in close proximity to the airport.

A-73
Attachment B



March 3, 1978

Archaeological Impact Evaluation of two non-contiguous parcels of land
near Ignacio, Marin County: (A) Bel Marin Keys Unit IV and (B) Ignacio
Industrial Park Unit III (ARS 78-27)

Scope of Work

Pursuant to a recommendation from the National Park Service, a preliminary archaeological field reconnaissance was carried out by Archaeological Resource Service on February 24, 1978 of two non-contiguous parcels of land located within the community of Ignacio, near the city of Novato, Marin County, California (Map 1). Two years ago a draft Environmental Impact Study was written by Applied Sciences, at the request of the Army Corps of Engineers. In this document a cultural resource section was included; however, it appears that only one portion of the area proposed for modification had been physically surveyed, an area called the West Compound. Due to the incomplete coverage, ARS was contacted by representatives of the agencies proposing the modification (Belger Financial Corporation and Alternate Energy Systems) and requested to complete the reconnaissance of the two properties. Bel Marin Keys Unit IV is a proposed residential complex which is similar to the diked and filled areas presently developed along Bel Marin Keys Drive. Ignacio Industrial Park III is a continuation of commercial development along Bel Marin Keys Drive within what is a large expanse of filled and diked marshland. For the purposes of this report, Bel Marin Keys Unit IV will be called Parcel "A"; Ignacio Industrial Park III will be called Parcel "B".

Previous Archaeological Research

Prior to undertaking fieldwork, the archaeological site location maps for Marin County were examined. N.C. Nelson's 1909 publication on the shellmounds of the Bay reveals the presence of several aboriginal shellfish processing camps and larger village areas in the vicinity--notably CA-Mrn-170, -161, -160 near Hamilton Air Force Base. However, no prehistoric cultural resources were mapped by Nelson within the 2 areas presently examined. The West Compound, adjacent to Parcel A, has been previously examined by the preparers of the draft EIS and deemed to have historical significance. As this locale has already been evaluated by the DEIS, it was not re-evaluated by our survey.

Parcel A-Field Methodology and Findings

Map I demonstrates that Parcel A and B are non-contiguous. The draft Environmental Impact Statement combined the two areas in its

discussion. Parcel A consists of a 99+ acre parcel located to the east of Bel Marin Keys Road, near the knoll-top complex called the West Compound. This property has been dry farmed since the 1890's, when an artificial levee was built along Novato Creek, reclaiming marshland. Now the land lies at a mean elevation of minus 3 feet below sea level, encompassed by an earthen dike. The West Compound lies at 43 feet elevation and comprises the highest area within the survey tract. As it had already been examined in the DEIS, it was not re-visited. Even with the dike, the recent rains have caused considerable filling in of the fields, submerging over 75% of the survey tract. Submerged areas were not physically traversed. However, all relatively raised areas, such as islands, potential natural levees, or locales where historic structures are observed, was examined on foot along linear transects. Any exposed soil or cut trench or ditch (where a soil profile is exposed) was examined in order to determine the presence of either (1) discolored cultural soil, midden, shellfish food remains, chipped or ground stone implements indicative of aboriginal habitation or usage, or (2) historic structures and features which could be considered potentially significant. At no time did we observe any evidence of aboriginal habitation. One potentially significant historic period structure was discovered- a badly deteriorated 1920's clapboard residence located on the northeastern boundary of Parcel A. Its condition and recent age would weigh against it being considered overly significant. It is definitely not an outstanding example of farm domestic architecture. Also, there are several neighboring farm complexes where residences and outbuildings are in excellent condition (see Novato Old Town for an example). Since this structure is situated along the eastern-most boundary of the area proposed for modification, it is very possible that the structures will bear no direct impact from the proposed residential development.

Parcel B-Field Methodology and Findings

Ignacio Industrial Park Unit III is situated south of Bel Marin Keys Drive, and approximately 500 meters southwest of Parcel A. Parcel B is situated within previously drained marshland which is presently reverting to marshland. It is proposed to fill these areas and construct additional commercial buildings, as are present in Units I and II to the south. CA-Mrn-170 is reported to lie within the Industrial Park; however, in the late 1960's, this resource was "salvaged" in large part during development of the first increment of the industrial park. The area where this resource is reported was not re-visited by ARS, and as it lies outside of the area being investigated, we are unable to determine if its remnants will be potentially impacted by the third increment.

Again submerged or waterlogged land was not physically traversed, except to reach two relatively raised areas which were examined. One area, covered with willow trees and thick blackberry bramble, appears to represent a residential farm complex which is completely abandoned and in an active state of decay. Several wooden fence posts and a concrete trough (or garden border) are some notable features. However, the extreme density of the vegetation and the submerged condition of much of the area hampered our gaining a complete understanding of the feature.

A similiar, but separate raised area was also observed; submerged areas prevented our physically reaching the area, but it appears to be an artificial pile of earth, possibly a spoils pile from the earlier dike construction.

Conclusions

Previous archaeological investigation in the area has revealed that raised areas within the marsh-islands, levees and the like-are particularly sensitive to aboriginal utilization as well as historic period occupation. All previously known prehistoric sites can be found on raised areas lying outside the two survey tracts. No prehistoric sites are reported to exist on the West Compound rise; this lack of sites may be due to sampling during Nelson's era. As we did not re-visit the West Compound, we do not know if a prehistoric site is not present. The West Compound has been declared a significant historic building complex, and for this reason, proposed alterations apparently will not disturb it. The marshland adjacent to the West Compound did not reveal any significant prehistoric or historic era resources. Survey of Parcel B also failed to reveal highly significant historic resources, although a significant prehistoric resource, CA-Mrn-170, may be indirectly impacted by the continued development of the industrial park. There is a possibility that archaeological materials contained with soils taken from the area of CA-Mrn-170 may have been scattered throughout the area developed as the industrial park. In the event that concentrated amounts of discolored soils containing shellfish remains and/or stone implements are encountered during trenching, grading, or other construction activities, all work should stop within 30 meters (approximately 100 feet) of the find, and an archaeologist called in to examine the find and determine its significance, in order to propose appropriate mitigation measures.

References

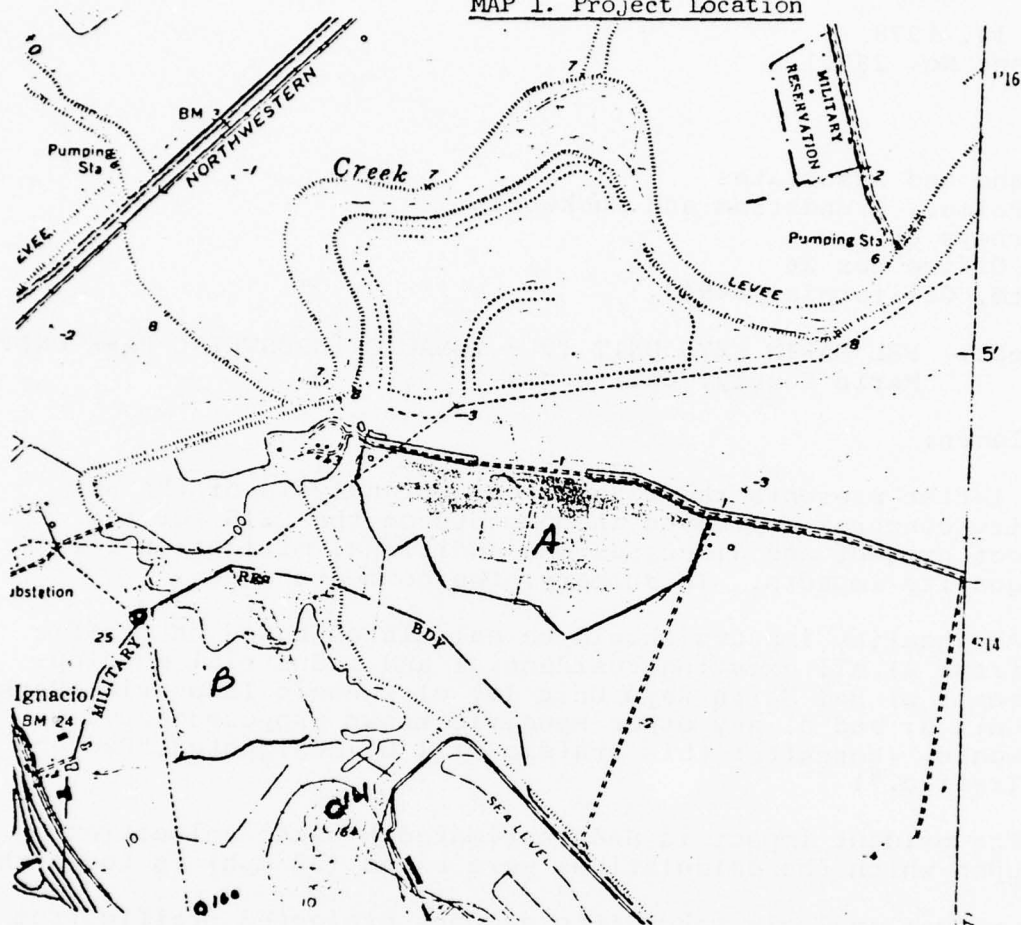
- Nelson, N. C.
1909 Shellmounds of the San Francisco Bay Region. University of California Publications in American Archaeology and Ethnology 7, (4):310-348.

Signed,

Katherine Flynn

Katherine Flynn for Archaeological Resource Service

MAP I. Project Location



Section of the Novato 7.5 minute USGS quadrangle, showing survey tracts (A) Bel Marin Keys Unit IV, and (B) Ignacio Industrial Park Unit III.

NOT FOR PUBLIC DISTRIBUTION

R.C.HARLAN AND ASSOCIATES

geotechnical consultants

55 NEW MONTGOMERY STREET • MAILING ADDRESS P.O. BOX 7717 • SAN FRANCISCO, CALIFORNIA 94120 • (415) 434-3004

June 14, 1978
Project No. 283.1

Soiland and Associates
c/o Palmer, Grundstrom and Duckworth
Attorneys at Law
Post Office Box 26
Novato, California 94947

Subject: BEL MARIN KEYS UNIT IV - IGNACIO INDUSTRIAL PARK UNIT 3
Marin County, California

Gentlemen:

This letter presents the results of our analysis of the air quality concerns expressed in comments on the DEIS for the subject project and discusses one additional mitigation for air quality impacts. In summary, the comments were:

1. Air quality impacts should be calculated based on traffic from: a) all existing residential and industrial development; b) Bel Marin Keys Unit IV; c) Ignacio Industrial Park Unit 3; and d) any other specific known proposed developments, (Hereafter this traffic will be designated "Project Traffic.")
2. The oxidant impact is underestimated because velocities upon which the calculations were based (30 mph) is too high.

This recent analysis takes into account projected traffic from all existing and proposed projects and is based on an average vehicle speed of 20 mph. Separate calculations were made to identify the impacts of: a) the Project Traffic; and b) the Project Traffic including existing freeway traffic. Detailed data used in the calculations are on Table 1 and on Plate 4 from the DEIS. The methods used are as described in "Guidelines for Air Quality Impact Analysis of Projects," prepared by Bay Area Pollution Control District, and dated June, 1975. Results are presented on Table 2 and on project impact summary forms numbered 1A (Project Traffic) and 1B (Project Traffic plus Freeway Traffic).

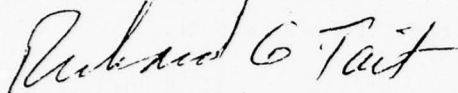
Comparing the results against air quality standards (Table 2) the impact of pollutants from either the Project or the Project plus Freeway Traffic volume will be to exceed standards for carbon monoxide, nonmethane hydrocarbons and nitrogen dioxide. Standards for sulfur dioxide and suspended particulates will not be exceeded.

Soiland and Associates
June 14, 1978
Page 2

In addition to the mitigation measures proposed for air quality impacts in the DEIS, Highway 101 could be widened to 8 lanes with a provision for an exclusive bus and car pool lane during the commute hours.

Very truly yours,

R. C. HARLAN AND ASSOCIATES



Richard G. Tait
Civil Engineer 15303

attachments: Tables 1 and 2
Plate 4
Project Impact Summary Forms 1A and 1B

rg

TABLE 1

TRAFFIC DATA FOR RESPONSE TO AIR QUALITY CONCERNS

A. TRAFFIC BASE

1. Project Traffic⁽¹⁾

<u>Daily</u>	<u>Peak Hour</u>
42805	4117

2. Maximum Internal Traffic⁽²⁾ within LPIA (see Plate 4)

	<u>Daily</u>	<u>Peak Hour</u>
a) Bel Marin Commerce Park #1	1438	144
b) Bel Marin Commerce Park #2	680*	68*
c) Ignacio Industrial Park #1	3570	357
d) Ignacio Industrial Park #2	5950	595
e) Ignacio Industrial Park #3	2400	500

3. Project Traffic Plus Freeway Traffic

	<u>Daily</u>	<u>Peak Hour</u>
US 101 ⁽³⁾	73000	8000
Total Traffic ⁽⁴⁾ Less Internal	32100	3210

B. Link Length

Freeway: .62 mi
Project: 1.15 mi

C. Peak Hour: 5 - 6 p.m.

D. Average Speed: 20 mph

E. Year of Utilization: 1987

*20% of (b) is within the LPIA.

(1) See response to traffic concerns. Includes traffic from existing and future projects.

(2) From Appendix VII p. VII(6) of Appendix C of DEIS.

(3) Caltrans 1976 count at Ignacio Interchange.

(4) 75% of Traffic listed for A.1.

TABLE 2
TRAFFIC RELATED AIR QUALITY IMPACTS

<u>Contaminant</u>	<u>San Rafael Background Level (1977)</u>	<u>Project Plus Background</u>	<u>Project Plus Freeway Plus Background</u>	<u>Federal Standard</u>
carbon monoxide 8 hr avg. (ppm)	7.9	10.1	12.4	9.0
nitrogen dioxide, 1 hr avg, (ppm)	.14	.45	.86	.25
sulfur dioxide 24 hr avg. (ppm)	.015	.035	.056	.14
suspended particulates annual avg. ug/m ³	34.0	41.0	49.0	75.0

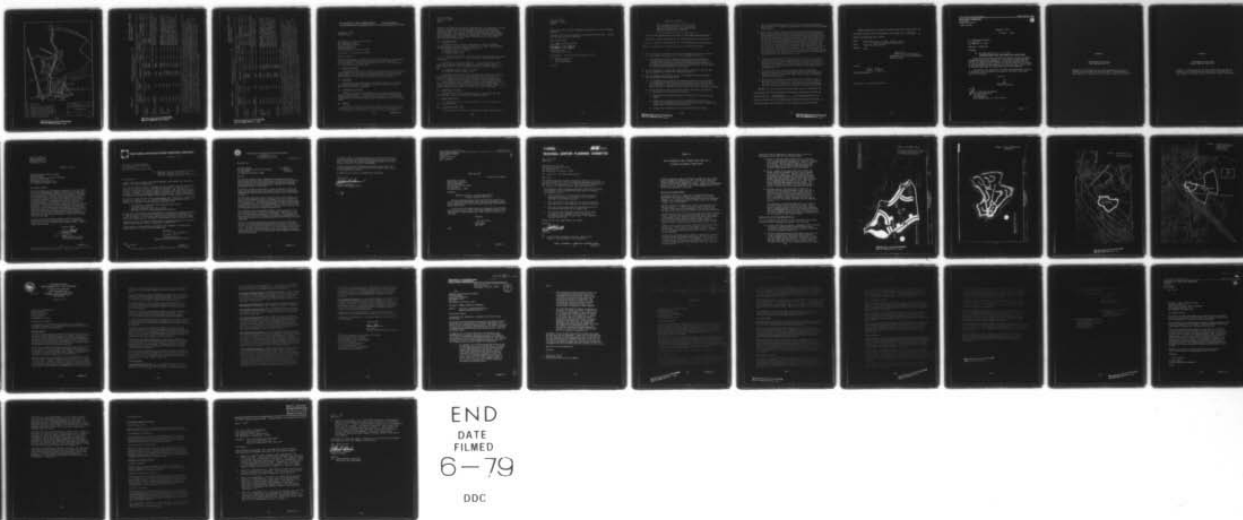
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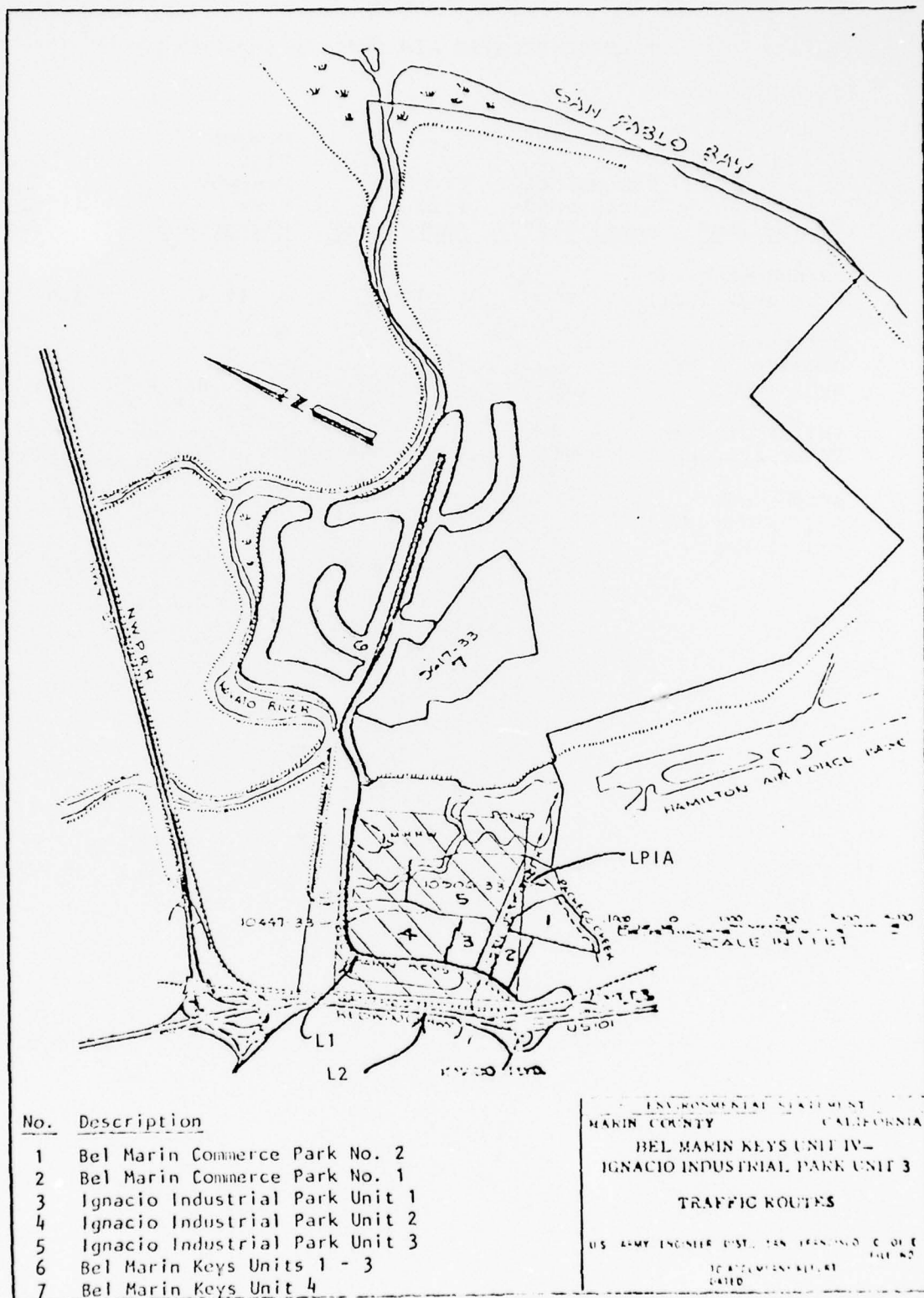
CORPS OF ENGINEERS SAN FRANCISCO CALIF SAN FRANCISCO--ETC F/6 5/1
BEL MARIN KEYS UNIT IV - IGNACIO INDUSTRIAL PARK UNIT 3, MARIN --ETC(U)
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NL

2 OF 2
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A-82

PLATE 4

THIS PAGE IS BEST QUALITY PRACTICABLE
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*Bel Marin Keys - Long
Industrial Park*

"Project"
PROJECT IMPACT SUMMARY FORM NO. 1. * A
(Line and area sources)

Contaminant	Air quality standard averaging time	Air quality standard ($\mu\text{g}/\text{m}^3$)	Calculated air quality impacts ($\mu\text{g}/\text{m}^3$)							
			Regional	Area 1	Local Area 2	Area 3	Roadside Road 1 Road 2 Road 3 Road 4			
Carbon monoxide	1-hour	40,000	<u>3.2</u>	<u>4180</u>	_____	_____	<u>5357</u>	_____	_____	_____
	8-hour	10,000	<u>2.2</u>	<u>2230</u>	_____	_____	<u>1440</u>	_____	_____	_____
Non methane hydrocarbons (6-9a.m.)	3-hour	160	<u>.3</u>	_____	_____	_____	_____	_____	_____	_____
			_____	Non-methane hydrocarbon entries can be used locally and regionally to estimate the potential for oxidant formation.						
Nitrogen dioxide	1-hour	500	<u>.5</u>	<u>360</u>	_____	_____	_____	_____	_____	_____
A-83	1-year	100	<u>-</u>	<u>51</u>	_____	_____	_____	_____	_____	_____
Sulfur dioxide	1-hour	1,306	<u>.05</u>	<u>50</u>	_____	_____	_____	_____	_____	_____
	24-hour	104	<u>.03</u>	<u>23</u>	_____	_____	_____	_____	_____	_____
	1-year	80	<u>-</u>	<u>6</u>	_____	_____	_____	_____	_____	_____
Suspended particulate	24-hour	100	<u>.07</u>	<u>25</u>	_____	_____	_____	_____	_____	_____
	1-year	66	<u>-</u>	<u>7</u>	_____	_____	_____	_____	_____	_____

Please note: This form provides for three area source computations and four roadside computations. The specific area sources and roads for which the computations are made should be identified on an accompanying site plan or other mapping of the project area. Additional copies of this form may be used if necessary.

* Line and area source impact is indicated on this form as the maximum concentration of air quality standard related contaminants expected to occur during a single year as the result of project emissions. Impact calculations are based on simplified, manual dispersion calculations and statistical techniques with conservative input values. Impact is analyzed on a regional and local basis for project emissions alone and on a roadside basis for total project and non-project emissions. An impact is given for each of the averaging times appropriate to a given standard. By 1980, this information is considered sufficient as a first approximation of the extent to which air quality will be degraded by the project alone. Determination of the significance of the impact should be made by an air pollution control agency or qualified consultant with a consideration of projected background concentrations resulting from non-project emissions.

Bel Marin Keys - Gravel
Industrial Park

PROJECT IMPACT SUMMARY FORM NO. 1 * B
(Line and area sources)

FINDINGS + RECOMMENDATIONS

Contaminant	Air quality standard averaging time	Air quality standard ($\mu\text{g}/\text{m}^3$)	Calculated air quality impacts ($\mu\text{g}/\text{m}^3$)				
			Regional	Area 1	Area 2	Local	Road 1 Road 2 Road 3 Road 4
Carbon monoxide	1-hour	40,000	6.4	0.257			5921 10297
	8-hour	10,000	4.5	1.21			1442 3330
Non-methane hydrocarbons (6-9a.m.)	3-hour	160	7				
Nitrogen dioxide	1-hour	500	1.2	0.31			
	1-year	100	-	1.40			
Sulfur dioxide	1-hour	1,306	1	104			
	24-hour	104	0.07	47			
Suspended particulate	1-year	80	-	13			
	24-hour	100	0.07	52			
	1-year	66	-	15			

Non-methane hydrocarbon entries can be used locally and regionally to estimate the potential for oxidant formation.

Please note: This form provides for three area source computations and four roadside computations. The specific area sources and roads for which the computations are made should be identified on an accompanying site plan or other mapping of the project area. Additional copies of this form may be used if necessary.

* Line and area source impact is indicated on this form as the maximum concentration of air quality standard related contaminants expected to occur during a single year as the result of project emissions. Impact calculations are based on simplified, manual dispersion calculations and statistical techniques with conservative input values. Impact is analyzed on a regional and local basis for project emissions alone and on a roadside basis for total project and non-project emissions. An impact is given for each of the averaging times appropriate to a given standard. This information is considered sufficient as a first approximation of the extent to which air quality will be degraded by the project alone. Determination of the significance of the impact should be made by an air pollution control agency or qualified consultant with a consideration of projected background concentrations resulting from non-project emissions.

R.C.HARLAN AND ASSOCIATES

consulting engineers

55 NEW MONTGOMERY STREET • MAILING ADDRESS P.O. BOX 7717 • SAN FRANCISCO, CALIFORNIA 94120 • (415) 434-3004

January 9, 1979
Project 283.1

Mr. James C. Wolfe, Acting Chief
Engineering Division
San Francisco District
Corps of Engineers
211 Main Street
San Francisco, California 94105

Attention: Environmental Branch

Dear Mr. Wolfe:

This letter presents responses to verbal comments by Mr. Richard Poole, Environmental Branch, concerning the Bel Marin Keys Unit-IV (BMK-IV), Ignacio Industrial Park-Unit 3 (IIP-3), Final Environmental Impact Statement.

1. Dike Dependency

Neither the BMK-IV nor the IIP-3 project depend on the existing dikes along San Pablo Bay or Novato Creek for flood protection. Consequently, the structural and hydrological adequacy of the dikes is not a factor that would affect project design.

2. Flooding

The areas to be occupied by the BMK-IV and IIP-3 projects are presently subject to flooding and will continue to be so until the grading is completed.

3. Hydrologic Criteria

Rainfall intensity experience for the area is recorded on page 36 of Appendix C, in the FEIS, "The United States Weather Bureau Technical Paper #40 shows that 6 inches of rainfall has a probability of occurring once in one hundred years in the Novato area".

4. Runoff

The effects that the BMK-IV and IIP-3 projects will have on runoff will be miniscule in terms of quality and quantity. Mr. Lee Oberkamper, Civil Engineer, who has performed hydrologic

Mr. H.E. Pape
January 9, 1979
page 2

analyses for both the projects, reports that the incremental runoff volume attributed to the two projects will be, conservatively speaking, less than 0.5% of the total runoff of the 5,200 acre watershed area. The quality of the runoff from the IIP-3 project is discussed in our response to Comment No. 2 from the Resources Agency of California. The runoff characteristics from BMK-IV, are expected to be similar.

5. Elevation Data

According to Marin County Ordinance No. 2245, attached, final minimum elevations after a period of 30 years of settlement as predicted by soils engineering shall be :

- a) Street Gutters, +7.0 MSL
- b) Finish Floors, +9.0
- c) Garage Slabs, +8.0

Mr. Lewis Frederickson, Assistant Flood Control Engineer, Marin County, indicates that +7 is the one hundred year design flood elevation.

According to "Drainage Analysis - Ignacio Industrial Park", prepared by Gonzalez and Oberkamper, Civil Engineers, Inc., and dated July 25, 1975, minimum elevations after settlement will be:

- a) Drainage Inlet Grades, +7.0 MSL
- b) Building Finish Floors, +8.0

Additional criteria in this analysis are that storm drainage and ponding facilities shall be such that water will not be allowed to reach the level of the finished floors during a storm having a probability of occurrence of once in one hundred years.

During normal tidal conditions, the IIP-3 streets will not be subject to flooding during the one hundred year design flood. There could be minor street flooding if the one hundred year design flood occurs simultaneously with the MHHW tidal condition.

6. Hydrologic Criteria

The Marin County Flood Control District considers the one hundred year flood as adequate for design purposes.

7. Water Dependency

The BMK-IV project is water dependent, the IIP-3 project is not water dependent.

8. Alternatives to IIP-3

Aside from the alternatives discussed on pages 43-45 of the

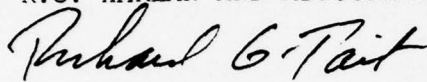
Mr. H.E. Pape
January 9, 1979
page 3

FEIS, there are no other feasible alternatives to the proposed project.

We trust this letter contains the information required. Please call if you have any questions.

Very truly yours,

R.C. HARLAN AND ASSOCIATES

A handwritten signature in cursive script, reading "Richard G. Tait".

Richard G. Tait
Civil Engineer 15303

attachment: Marin County Ordinance No. 2245

cc: Edwin Grundstrom
Lee Oberkamper
R. Howard Harmer

RGT/cjr

ORDINANCE NO. 2245

AN ORDINANCE OF THE COUNTY OF MARIN, STATE OF CALIFORNIA, APPROVING AN RSP MASTER PLAN FOR DEL MARIN KEYS UNIT 4 AND SETTING FORTH CONDITIONS WHICH MUST BE OBSERVED.

THE BOARD OF SUPERVISORS OF THE COUNTY OF MARIN DOES ORDAIN AS FOLLOWS:

SECTION 1: An RSP Master Plan in the Del Marin Keys area on Assessor's Parcel Nos. 157-172-04 (Portion), 05, 18, and 157-361-03 (portion) are hereby approved, which approval shall be in accordance with the following:

- A. The development, maintenance, and use of the property shall be carried on in conformance with certain maps and plans entitled as follows:
 1. "Del Marin Keys Unit 4", Master Development Plan, Noise Contours, Secondary Floodway Plan, Proposed Grading Plan, Grading Section, Boundary Topographic Map, Landscape Plan by Gonzalez and Oberkamper, Drawings 1-7, dated December 17, 1975 and marked Exhibit "A", as filed in the Planning Department of Marin County.
- B. No building shall be constructed, maintained, or used other than for the purpose specified in Exhibit "A" referred to herein.
- C. The development, maintenance, and use of the property shall be further subject to the following conditions:
 1. Any tentative map, parcel map, or final map required to implement Del Marin Keys Unit 4 will only be approved subject to the condition that the development of all parcels shown on said map and not described as Unit 4 will first require an overall Master Plan as per applicant's agreement.
 2. Final elevations, after a period of 30 years settlement as predicted by soils engineering, shall be as follows:
 - a. Roadway gutter elevations shall be a minimum of 7.0 feet mean sea level.
 - b. Finish floor elevations shall be a minimum of 9.0 feet mean sea level, including any mechanical pads supporting electrical equipment, heater ducts, and hot water heaters, etc.
 - c. Garage slabs shall be a minimum of 8.0 feet mean sea level.

3. The "Proposed Grading Plan" indicates earthwork extending beyond the bounds of Unit 4. It shall be required that all work shall be contained within Unit 4.
4. Prior to the approval of any tentative map within the Bel Marin Keys Unit 4 area and prior to any excavating, grading, or filling within the Bel Marin Keys Unit 4 area, a flood plain drainage agreement shall be entered into between the property owners and the Marin County Flood Control and Water Conservation District which shall provide for the assurances relating to flood ponding capacities and associated issues as delineated in the F-2 Secondary Floodway Zoning of the County of Marin. As per the applicant's request, the above arrangements will permit mass grading, (excavation and fill) after approval of the master plan and prior to approval of a development plan. Filling shall be appropriately phased, under the direction of a registered soils engineer in order to eliminate the possibility of differential settlement along the longitudinal axis of the proposed keys.
5. Prior to approval of the development plan, the applicant shall submit contracts and/or agreements securing the maintenance responsibilities for all common areas of Bel Marin Keys Unit 4 including the lagoon, island, and landscaped areas. These contracts and/or agreements shall be subject to the approval of the Marin County Planning Department and County Counsel.
6. A site-specific noise assessment shall be made by a qualified acoustical consultant of all development areas within the 55 and 60 CNEL (Community Noise Equivalent Level) contours prior to approval of the development plan.
7. The developer shall deposit with the Department of Public Works an equitable amount of money per unit (computed on the basis of \$200 per acre) payable at close of escrow of each sale, as a contribution to a special fund for the future improvement of Ignacio Interchange.

SECTION II: This Ordinance shall take effect and be in full force and effect thirty (30) days after the date of passage and approval and shall be published in the Novato Advance, a newspaper published in the County, with the names of the Supervisors voting for and against the same, at least once before the expiration of fifteen (15) days after its passage.

PASSED AND ADOPTED at a regular meeting of the Board of Supervisors of
the County of Marin, State of California on the 21st day of December,
1976 by the following vote, to-wit:

AYES: SUPERVISORS Peter R. Arrigoni, Thomas S. Price,
Arnold M. Baptiste, Bob Roumiguere
NOES: SUPERVISOR Gary Giacomini
ABSENT: NONE

Bob Roumiguere
CHAIRMAN OF THE BOARD OF SUPERVISORS
COUNTY OF MARIN

Attest:

Peter Meyer
Clerk of the Board

MASTER PLAN: BEL MARIN KEYS UNIT 4

STATE LANDS COMMISSION

1807 13TH STREET

SACRAMENTO, CALIFORNIA 95814

(916) 322-7802



February 7, 1979

File Ref.: W 9950

R. C. Harlan and Associates
P. O. Box 7717
San Francisco, CA 94120

Attention: Richard Tate


Gentlemen:

RE: Bel Marin Keys Unit No. 4 - J. H. West
"Conceptual Master Plan" near Novato Creek, Marin County

Staff of the State Lands Commission has reviewed the recently updated information which you have supplied to us concerning the above referenced project, and, based on this information, it has been determined that you will not be required to obtain a permit for work associated with the project so long as the work does not extend onto the State owned bed of Novato Creek or any other lands under the jurisdiction of the Lands Commission.

This action is not intended as, nor shall it be construed as, a waiver of any right, title or interest by the State of California in any lands under its jurisdiction.

Sincerely,


A. L. JONES
Dredging Coordinator

ALJ/mm

cc: ✓ U. S. Army Corps of Engineers
San Francisco District
211 Main Street
San Francisco, CA
Attn: Richard Poole, RE: PNCSF 9617-33

APPENDIX B

ENVIRONMENTAL IMPACT REPORT
(BEL MARIN KEYS UNIT IV)

Appendix B was distributed with the Draft Environmental Statement and therefore is not included with this final report. Additional sets of this appendix are available from the San Francisco District upon request.

APPENDIX C

ENVIRONMENTAL IMPACT REPORT
(IGNACIO INDUSTRIAL PARK UNIT 3)

Appendix C was distributed with the Draft Environmental Statement and therefore is not included with this final report. Additional sets of this appendix are available from the San Francisco District upon request.

APPENDIX D

LETTERS OF COMMENT

APPENDIX D
LETTERS OF COMMENT

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Advisory Council on
Historic Preservation
1522 K Street NW
Washington, D.C. 20005

February 17, 1977

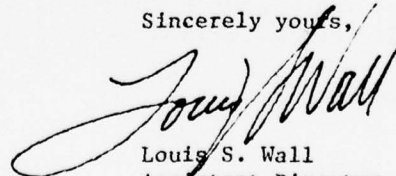
Brigadier General Richard M. Connell
Division Engineer
Corps of Engineers, South Pacific Division
Department of the Army
630 Sansome Street, Room 1216
San Francisco, California 94111

Dear General Connell:

This is in response to your request of February 11, 1977 for comments on the draft environmental statement (DES) for the Bel Marin Keys Unit IV - Ignacio Industrial Park Unit 3, Marin County, California. The Advisory Council on Historic Preservation notes from its review of the DES that while cultural resource studies to date indicate no properties included in or known to be eligible for inclusion in the National Register of Historic Places will be affected by the proposed undertaking, the possibility exists for previously unidentified cultural resources to be encountered during construction activities. Accordingly, the Corps of Engineers is reminded that should such cultural resources be identified which are subsequently determined eligible for inclusion in the National Register, all such activities affecting the resources should be delayed until the Council has been afforded an opportunity to comment pursuant to the "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R. Part 800).

Should you require additional assistance or have any questions concerning this matter, please contact Michael H. Bureman of the Council staff at P. O. Box 25085, Denver, Colorado 80225, telephone number (303) 234-4946.

Sincerely yours,



Louis S. Wall
Assistant Director, Office
of Review and Compliance

D-1

DOCUMENT D-1

The Council is an independent unit of the Executive Branch of the Federal Government charged by the Act of October 15, 1966 to advise the President and Congress in the field of Historic Preservation.



BAY AREA AIR POLLUTION CONTROL DISTRICT

March 23, 1977

U.S. Army Corps of Engineers
San Francisco District Office
211 Main Street
San Francisco, California 94105

Re: Comments on Draft Environmental Impact
Statement (DEIS): Bel Marin Keys
Unit IV - Ignacio Industrial Park Unit 3

Dear Sirs/Mss.:

We have reviewed the above-referenced document, and submit the following comments for your consideration.

Each separate EIR in Volume 2 analyzes the air quality impacts associated with each respective project, and the EIS (Volume 1, p. 34) generally discusses cumulative air quality impacts. However, the EIS does not quantify the cumulative air quality impacts associated with these two projects and other existing and proposed projects in the area. Such calculations of cumulative air quality impacts are crucial for the purposes of this EIS.

The proposed projects and related development are served by one major road and one key intersection. It should be possible to calculate relevant roadside air pollutant concentrations associated with:

- all existing residential and industrial development
- Bel Marin Keys Unit IV
- Ignacio Industrial Park Unit 3, and
- any other specific known proposed developments.

We note that the EIS does give quantitative estimates of cumulative totals of traffic generated by the two projects and six related developments (p. 40, Volume 1). Data such as this could be used as a basis for calculating the cumulative air pollutant concentration levels discussed above.

Additionally, the EIS should indicate what cumulative impact, if any, the proposed and related projects could have on Route 101.

Please address any questions concerning these comments to Ralph Mead, Senior Planner, Technical Services Division.

Sincerely,

Milton Feldstein
Deputy Air Pollution Control Officer

MF:g
cc: W. Lockett
ARB

D-2

DOCUMENT D-2

939 ELLIS STREET • SAN FRANCISCO, CALIFORNIA 94109 • (415) 771 6000



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

REGIONAL OFFICE
50 United Nations Plaza
SAN FRANCISCO, CALIFORNIA 94102

OFFICE OF
THE REGIONAL DIRECTOR

March 29, 1977

District Engineer
U.S. Army Engineer District, San Francisco
211 Main Street
San Francisco, California 94105

RE: SPDCO-0
PN 9617-33
PN 10906-33

Dear Sir:

The Draft Environmental Impact Statement for Bel Marin Keys Unit IV-Ignacio Industrial Park Unit 3, Marin County, California has been reviewed in accordance with the interim procedures of the Department of Health, Education and Welfare as required by Section 102(2)(c) of the National Environmental Policy Act, PL 91-190.

We find that the DEIS is deficient as it does not adequately assess the impacts of the proposed action and provides little, if any, mitigation or safeguards where the effects of the action are more than existing systems can handle.

The DEIS states that there will be a total increase of 256 students as a result of the proposed residential development. The EIS also identifies that the schools are nearing capacity and within two years the high school will exceed capacity. With the expected increased student loads generated by the project and those of future developments as a result of the project, assurances should be made by the elementary and high school districts that the new student load can be adequately provided for.

It is unknown at this time whether the Novato Sanitary District will be able to provide service to the Unit IV development. Annexation of Unit IV to the city would be required prior to servicing. What assurance has been received that the City of Novato would approve such annexation? What alternative servicing will be provided should the City of Novato refuse the annexation?

The lack of a street map hindered our review of the traffic circulation pattern. The traffic generation estimates for the project on Bel Marin Keys Blvd at Nave Intersection show the facility operating at Service Levels E or F. Are there any concrete plans to relieve the congestion that will occur? Particular attention should be given to the adequacy of providing Emergency Medical Services and Transportation (Medivac/emergency ambulance) under these conditions.

-1-

D-3

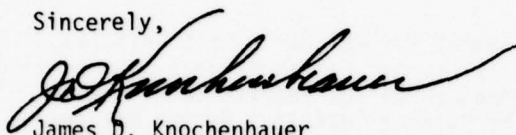
DOCUMENT D-3

The County of Marin is currently experiencing a critical water shortage. The proposed project will significantly increase the demand for domestic water. The EIS does not provide any assurance that water service can be provided to the Unit IV and Unit 3 developments.

In view of the critical conditions now existing in Marin County, the wisdom of proceeding with this project may be questioned until solutions to those problems are realized.

The opportunity to review this statement was appreciated.

Sincerely,



James D. Knochenhauer
Regional Environmental Officer

cc: OEA
CEQ

STATE LANDS DIVISION

1807 13TH STREET
SACRAMENTO, CALIFORNIA 95814

(916) 322-7810



March 25, 1977

File Ref.: SD 77-02-18

Department of the Army
South Pacific Division,
Corps of Engineers
San Francisco District Office
211 Main Street
San Francisco, CA 94105

Gentlemen:

SUBJECT: Draft E.S. - Bel Marin Keys Unit IV
- Ignacio Industrial Park Unit 3

The above-referenced project areas were originally acquired and sold as State swamp and overflow land. The area is crossed by historic sloughs, portions of which may be sovereign land under State Lands Commission jurisdiction.

At such time as the State's interest is determined, these developments may be required to obtain State Lands Commission approval for the areas effected. Please contact me at (916) 322-7810 if you have any questions.

Sincerely,

Scott Atkins

SCOTT ATKINS
Land Agent

SA:js



REGIONAL AIRPORT PLANNING COMMITTEE

March 28, 1977
1005-02-01

Department of the Army
San Francisco District Office
211 Main Street
San Francisco, California 94105

Re: Draft EIS - Bel Marin Keys Unit IV

Dear Sirs:


The ABAG/MTC Regional Airport Planning Committee, at their meeting on March 25, 1977, reviewed the enclosed staff report on the DEIS for Bel Marin Keys IV. Upon review and discussion of the report, the Committee passed the following motion:

The Regional Airport Planning Committee finds the following with respect to the proposed Bel Marin Keys IV housing development project:

1. That the project is inconsistent with the Regional Transportation Plan as it relates to the future operation of Hamilton Airport;
2. That the DEIS is deficient in the areas of aviation noise and safety (as indicated in enclosed report);
3. That the Corps should deny the dredging permit for the reasons indicated in the above; and
4. That the project sponsor be notified of the need to reconcile the apparent conflict between his residential plan and the policies of the Regional Transportation Plan.

Thank you for this opportunity to comment.

Sincerely,



JOSEPH P. BORT
Chairman

ck

cc: Donald Gutoff, Planning Director, Marin County
Gonzalez and Oberkamper, Civil Engineers

HOTEL CLAREMONT • BERKELEY, CALIFORNIA 94705

D-6

DOCUMENT D-5

COMMENTS ON

DRAFT ENVIRONMENTAL IMPACT STATEMENT ON BEL MARIN KEY IV RESIDENTIAL DEVELOPMENT IN MARIN COUNTY

The DEIS for Bel Marin Key IV was received by ABAG from the U.S. Army Corps of Engineers on February 14, 1977. The Corps was required to prepare the DEIS because the proposal requires a Corps excavating and fill permit for the creation of a lagoon. Comments must be submitted by March 28, 1977. Neither RAPC, MTC, or ABAG commented on the initial DEIR that was prepared in July, 1974.

What Are The Project's Impact?

The Bel Marin Key IV is a single family residential development approximately one-half mile northwest of Hamilton Air Force Base (Figure A). It is part of a larger residential-recreation development located in the unincorporated section of Marin County just southeast of Novato city limits (Figure B).

The DEIS provides noise contours for 1974 air reserve flights from Hamilton (Figure C). A Marin County ALUC report indicated that a number of homes would be located between the 60-65 CNEL contours. This level would require noise insulation of the residential buildings.

The DEIS does not discuss the impact of various future plans for Hamilton Airport. Specifically, it does not analyse the Marin County proposal to the General Services Administration for the reuse of the airport nor the Regional Airport Planning Committee (RAPC) proposals. Therefore, information on possible noise and safety impacts is not readily available. However, some of these impacts can be inferred.

Figure D provides the noise contours and flight paths for the general aviation uses in Marin County's reuse proposal. Some of the Bel Marin Keys IV lies within the 60-65 CNEL contours. In addition, the training flight patterns make their first turn over a portion of the development.

The DEIS makes no reference to the Regional Transportation Plan (RTP) proposal to study existing North Bay airports for their future use in satisfying the commercial air travel demands. More particularly, it makes no mention of the noise impact that might result from the 0-1 million annual passenger level indicated in the RTP proposal for North Bay service.

The Bel Marin Keys IV (and possible future portions of the total development) concerns RAPC for the following reasons:

- 1) safety - the training flight pattern takes off and makes its first right turn over the property. This poses a definite safety hazard since most accidents occur either at take-off or in landing. This situation is made worse due to the training nature of the flights and the unlikelihood that the exact flight pattern will be strictly followed.
- 2) noise - a number of the future homes will be within the 60 CNEL contour and therefore are sufficiently impacted to require noise insulation. Moreover, experience from other general aviation airports in the Bay Area (Buchanan and Reid-Hillview) indicates that the noise from training flights causes a particular problem. Most training flights occur on weekends when residents are out in their yards and are therefore more exposed to noise problems. The recreation design of Bel Marin Keys would promote such an outdoor lifestyle and therefore accentuate the problem.
- 3) North Bay service - the construction of homes next to Hamilton could sufficiently constrain airport use, due to violation of noise standards, that it would eliminate Hamilton from future use as an intra-California service point. Conversely, a future decision to use Hamilton for intra-California flights could mean that steps would have to be taken to purchase properties adversely impacted by noise.

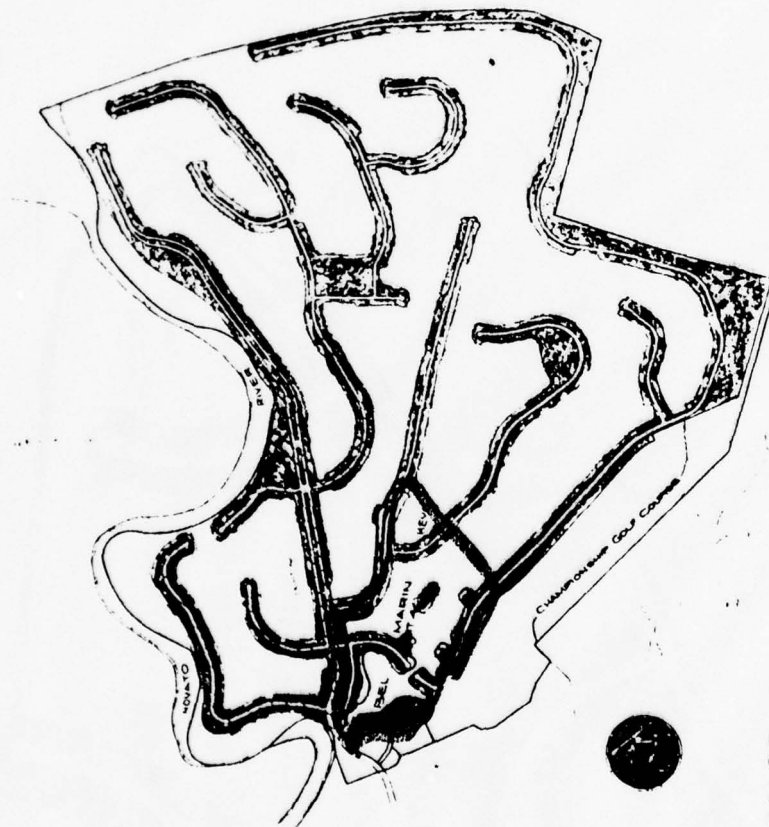
(The Committee is reminded that RAPC policy is in conflict with that of Marin County and the City of Novato. Marin County has adopted a policy that Hamilton Airport should be used for general aviation with an annual maximum of 425,000 operations (flights). The policy of the City of Novato is that the future of Hamilton Airport should be for non-aviation uses with the exception of Coast Guard flights.)

Regional Airport Planning Committee Action

The staff recommends that the RAPC instruct the staff to send a letter to the Army Corps of Engineers stating one of the following:

- 1) The Corps should deny the permit if subsequent studies indicate substantial a) safety problems, b) noise problems and/or c) potential restrictions on Hamilton serving as a North Bay intra-California service point or
- 2) The Corps should consider the above RAPC concerns and give further and expeditious attention to a) safety problems, b) noise problems and/or c) potential restrictions on future North Bay commercial aviation service. Mitigation measures, that may require some form of project re-design, should be included in the final EIS and in conditions of permit approval.

FIGURE B - TOTAL BEL MARIN KEYS
DEVELOPMENT

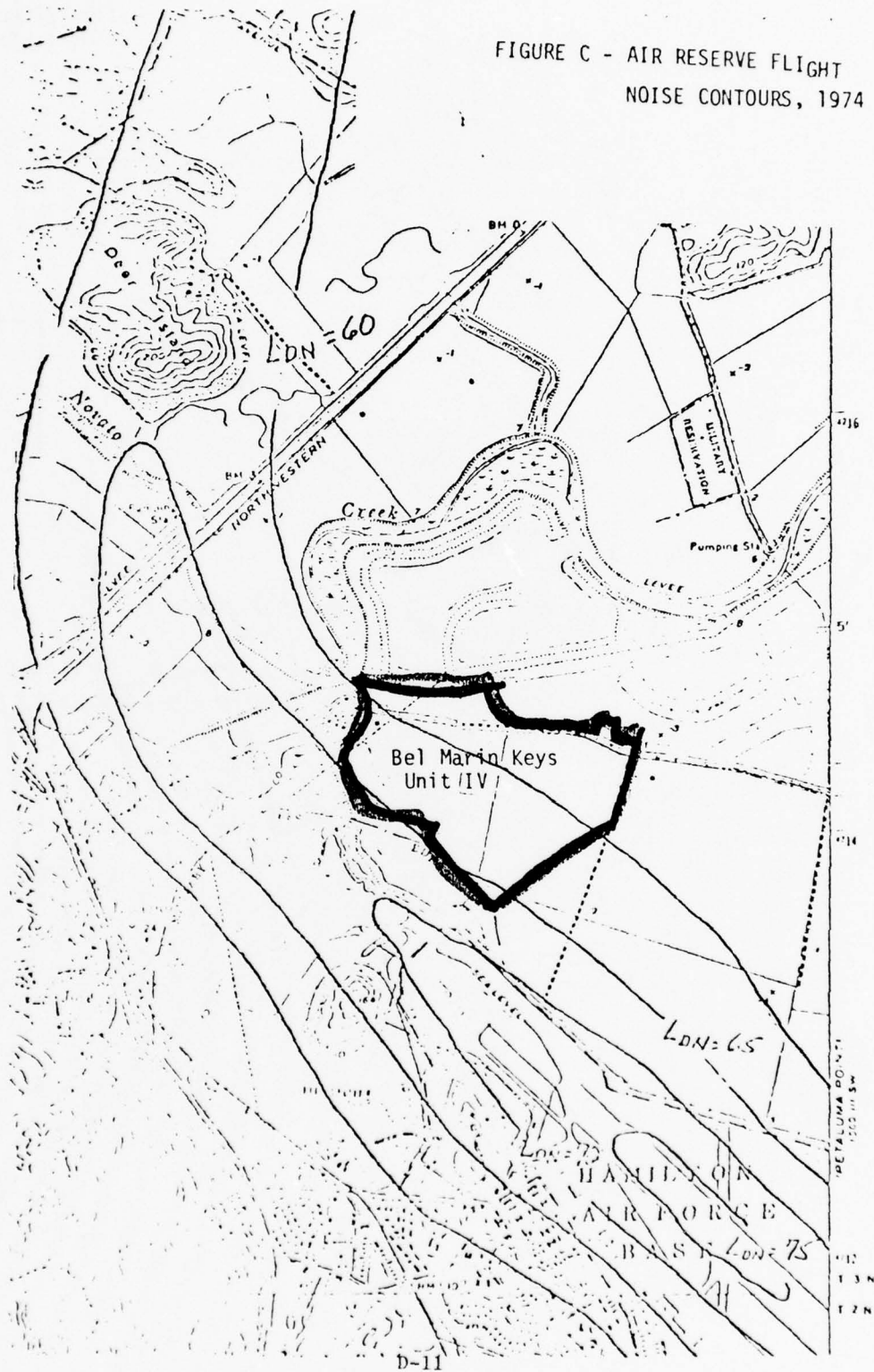


GERALD BY GOLOB AIA
ARCHITECT & ASSOCIATES
INCORPORATED 1974 1400 N. 11th St.
TAMPA, FL 33604

GONZALEZ & OBERKAMPER
CIVIL ENGINEERS INC.
1400 N. 11th St. TAMPA, FL 33604

DESIGNED BY
BEL MARIN KEYS

FIGURE C - AIR RESERVE FLIGHT
NOISE CONTOURS, 1974



THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

FIGURE D - GENERAL AVIATION NOISE
CONTOURS FOR MARIN
REUSE PROPOSAL
(1996 contours)

The map displays the Marin Reuse Proposal area with various noise contours. Key features include:

- Unit IV**: A specific area outlined in the central part of the map.
- Total Development Area**: A larger area outlined, encompassing Unit IV and extending to the southeast.
- Training Pattern**: A series of lines extending from the development area towards the bottom right, indicating flight paths.
- Pipeline**: A line running parallel to the training pattern on the right side.
- North Arrow**: Located in the upper right corner, pointing towards the top of the map.
- Other Labels**: Various smaller labels such as 'MUD', 'CHIL', 'PIPELINE', and 'AREA' are scattered across the map.

D-12



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION NINE

Two Embarcadero Center, Suite 530
San Francisco, California 94111

ARIZONA
CALIFORNIA
NEVADA
HAWAII
GUAM
AMERICAN SAMOA

IN REPLY REFER TO

9ED

March 29, 1977

General Richard N. Connell
South Pacific Division Engineer
U.S. Army Corps of Engineers
630 Sansome Street, Room 1216
San Francisco, California 94111

Dear General Connell:

We have reviewed the Draft Environmental Impact Statement for the Bel Marin Keys Unit IV/Ignacio Industrial Park Unit 3 Project in Marin County, California, and provide the following comment.

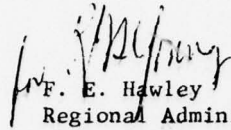
The only vehicular access serving the project area is Bel Marin Keys Boulevard, a two-lane road. Section 4.56 of the Draft Statement indicates that the cumulative effect of the two projects addressed in this EIS and six other projects approved or under construction in the same area would create a traffic volume of 2457 vehicles per peak hour and that full development of Bel Marin Keys would more than double this traffic. As discussed in Section 4.57, Marin County requires roadway improvement when traffic flow conditions exceed Service Level D. The Federal Highway Capacity Manual states that the maximum service volume on a two-lane highway under ideal conditions for level of Service D is 1700 vehicles per hour. Therefore, it is apparent that the capacity of Bel Marin Keys Boulevard would be exceeded resulting in extreme traffic congestion and roadway improvement would be required by Marin County.

Bel Marin Keys Boulevard is on the Federal-aid Highway System and is eligible for Federal Highway funds. It is apparent that some highway improvement will be needed. As lead agency the Corps of Engineers should consider addressing the environmental effects of the required roadway improvements in the Bel Marin Keys EIS. This procedure will avoid EIS duplication if and when Federal Highway Administration funds are requested for the highway project. This will become especially important since the required roadway project appears to require a Corps of Engineers 404 permit.

2-16
2/23/77

Please contact Mr. D. L. Eyres, District Engineer, FHWA, California Division Office, at (916) 448-3541 for assistance in this matter.

Sincerely yours,


F. E. Hawley
Regional Administrator



UNITED STATES
DEPARTMENT OF THE INTERIOR

OFFICE OF THE SECRETARY

PACIFIC SOUTHWEST REGION
BOX 36098 • 450 GOLDEN GATE AVENUE
SAN FRANCISCO, CALIFORNIA 94102
(415) 556-8200

ER 77/185

March 31, 1977

Colonel H. A. Flertzheim, Jr.
District Engineer,
San Francisco District
Corps of Engineers
211 Main Street
San Francisco, CA 94105

Dear Colonel Flertzheim:

The Department of the Interior has reviewed the two volume draft environmental statement for Bel Marin Keys Unit IV, Ignacio Industrial Park Unit 3, Marin County, California.

General Comments

The draft statement adequately describes fish and wildlife resources of the project site and impact upon them. The document, however, fails to discuss any specific mitigative measures that would be implemented to compensate for fish and wildlife losses incurred by the Bel Marin Keys portion of the proposed project. We suggest that a fish and wildlife loss mitigation plan be presented as an integral part of project design and discussed in the text as a project component.

We feel the environmental statement should discuss the Bel Marin Keys Unit IV project as one part of the overall Ignacio Industrial Park development. The isolated analysis of each segment that apparently will be presented at various future times does not permit an evaluation of cumulative environmental impacts for the entire project.

The flood potential for the project is not clearly described. The Bel Marin Keys area is subject to flooding, but the frequency of flooding is not estimated. Apparently hydrologic studies have not been completed by the developer. The Ignacio Industrial Park Unit 3 would be protected from a 100-year storm according to the applicant's calculations. However, in a review of the EIR included under appendix C, the Corps of Engineers

arrived at a higher stage for the 100-year event. The final statement should include an up-to-date appraisal of the flood potential of both sites.

The draft statement describes the impacts of ground water on the project. However, we feel the statement should consider impacts on ground water (and ultimately on the lagoons) from polluted runoff. A brief description of the local occurrence of ground water would be helpful.

Possible alternative sources of water supply for the Bel Marin Keys Unit IV development should be discussed, inasmuch as there seems to be real doubt that the North Marin Water District will be able to supply water to the project.

The project will have no known adverse impacts on mineral development, nor will it directly affect any existing or proposed units of the National Park System, or any existing, proposed, or known potential sites or properties listed, or to be listed, as National Landmarks.

We suggest the statement provide more information on the cultural resources in the project area. The effects of the proposed project upon cultural resources cannot be evaluated without documentation of precisely what areas were examined.

Consultation with the State Historic Preservation Officer, and other appropriate authorities, should be documented in the final statement. In addition, copies of any archeological reports pertaining to the proposed project should be sent to the Western Archeological Center, National Park Service, P. O. Box 49008, Tucson, Arizona 85717, in order that a more informed evaluation may be made of the final statement.

The environmental statement indicates that there will be additional recreational facilities provided by the project. However, the statement does not indicate if it is to be provided by the County, the Community Services District or the developer. The statement indicates that the Community Services District will maintain the facilities. We suggest this discussion be clarified.

Also, the statement indicates that a "pleasure isle" will be provided in the new lagoon. However, past experience in the community indicates that these "islands" do not receive much public use without the provision of electric power and domestic water. These utilities should be provided underground at the time of lagoon construction.

Specific Comments

Vol. 1, page 6, section 1.20: It is not clear how 950 acres would be returned to tidal action if proposed development is similar to that now existing. The present lagoons are not subject to normal tidal action,

but are connected to Novato Creek through a lock system. The statement should clarify whether the ultimate plan is to allow the full ebb and flow of the tide to occur within the 950 acres of waterways.

Vol. 1, page 7, section 1.28: The California Department of Fish and Game has suggested adequate mitigation proposals for fish and wildlife. From the standpoint of fish and wildlife management and appraisal of overall project effects on these resources, it would be useful to prepare a mitigation plan for the entire Bel Marin Keys development proposal before any portion is constructed.

Vol. 1, page 9, section 2.02: These periodically flooded wetlands are of prime importance to migratory birds in addition to wildlife in general.

Vol. 1, page 11, section 2.13: Both the endangered California clapper rail and salt marsh harvest mouse occur in the vicinity of Novato Creek. The statement should describe the ultimate effect of the Bel Marin Keys expansion on Novato Creek.

Vol. 1, page 14, section 2.21: The statement discusses the strongest earthquakes recorded near the project site. In describing the size and severity of earthquakes, two scales of measurement are used, often confusing to the non-scientist. For clarification, we suggest using a comparison with wording such as: "The strongest seismic intensity experienced in the vicinity of the sites was during the 1906 San Andreas event. Tremors measured X on the modified Mercalli scale which is approximately comparable to 7.9 on the Richter scale."

Vol. 1, page 43, section 4.71: It is estimated that cumulative impacts resulting from Bel Marin Keys and Ignacio Industrial Park including existing and future development will affect approximately 2,000 acres of land. Although a large amount of the area was marshland prior to 1892, the possibility of significant historic resources cannot be eliminated. The State Historic Preservation Officer may be of assistance in coordination of a cultural resource survey for the ultimate development area. Early planning for the identification and evaluation of cultural resources may result in useful information for the decision making process.

Vol. 2, Appendix B, page 41: Information concerning cultural resources at Bel Marin Keys Unit IV was obtained from a records search and a previous study of the Novato Creek Watershed. There is no indication whether the entire 150 acres impacted by this project were investigated. There are several sites located south and west of the project property, as well as several along the bay shoreline north of Novato Creek. The State Historic Preservation Officer should be consulted in order to determine possible effects of the project upon these resources. Potential impacts to these sites as a result of the project should be addressed in the final statement. Structures of possible historical significance should also be evaluated for their National Register of

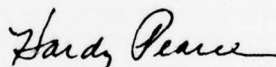
Historic Places eligibility. If it is determined, through consultation with the State Historic Preservation Officer, that the structures appear to qualify for inclusion in the National Register, the State Historic Preservation Officer and the Advisory Council on Historic Preservation should be contacted prior to any disturbance or relocation of these properties.

Vol. 2, Appendix C, page 54: At the Ignacio Industrial Park Unit 3, only the hill next to Bel Marin Keys Boulevard was surveyed for cultural resources. According to the archeologist who performed the survey, this appeared to be "the only portion of the site on which prehistoric occupation seemed possible." However, we suggest a cultural resource survey be designed to locate and identify resources of significant historic value, as well as prehistoric resources.

In addition, although the likelihood of locating cultural resources appears remote, an examination of the project area should be conducted.

We appreciate the opportunity to review and comment on the draft environmental statement.

Sincerely yours,



Hardy Pearce
Regional Environmental Review Officer

cc:

Office of Environmental Project Review w/c incoming
Regional Director, FWS, Portland
Regional Director, BOR, San Francisco
Regional Director, NPS, San Francisco
Director, USGS, Reston
State Director, BLM, Sacramento
Director, BOM, Washington
Regional Director, BuRec, Sacramento
Area Director, BIA, Sacramento

Cons to Opn

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

San Francisco Airport District Office
831 Mitten Road
Burlingame, California 94080



AUG 1 1977

Brigadier General Richard M. Connell
Division Engineer
Army Corps of Engineers
630 Sansome Street
Room 1216
San Francisco, California 94111

Attention: SPDCO-0, PN9617-33, PN10906-33

Subject: Draft EIS - Bel Marin Keys Unit IV -
Ignacio Industrial Park Unit 3

Dear General Connell:

We appreciate this opportunity to comment on the subject permit applications.

As you know, the County of Marin has applied to the General Services Administration for sponsorship of de-activated Hamilton Air Force Base as a civil, public-use airport facility. Our comments, therefore, are based upon an assumption that Hamilton AFB will see a significant and growing usage by both military and civilian aircraft in the not too distant future.

Although we have no specific objection to the commercial uses contemplated for the Ignacio Industrial Park Unit 3 development, we are highly concerned with the proposed expansion of residential uses specified in the plan for Bel Marin Keys Unit IV. The following discussion relates our view that expansion of Bel Marin Keys and use of Hamilton AFB as a public airport are incompatible:

- o The proposed site of Bel Marin Keys Unit IV lies within a noise impact area of 55 to 60 CNEL (db) as determined by noise modeling performed for the County based upon forecast 1996 operations at the airport. This noise level exceeds the Environmental Protection Agency recommended standard for a composite exterior noise level, 55 L_{dn}, considered necessary to protect the public health and welfare with an adequate margin of safety. The 55 L_{dn} or 55 CNEL standard relates to the effects of noise upon both activity interference and hearing loss considerations.

- o Upon reactivation of Hamilton AFB for public use, it is contemplated that a traffic pattern be established on the northeasterly side of runway 12-30 which would assure routine overflight of the Bel Marin Keys Unit IV subdivision. Our experience has shown that frequent overflight of residential areas by any class of aircraft including small single-engine types can be a serious source of annoyance to local residents.
- o As a desirable measure to protect the approach to runway 12, the County may acquire a 2500-foot-wide by 5200-foot-long rectangle of land centered upon the extended runway 12-30 centerline and tangent to the runway end. This acquisition, if pursued by the County, would be eligible for Federal participation and would nearly abut the proposed expansion of Bel Marin Keys. The FAA strongly discourages new, noise-sensitive incompatible development which would adversely impact or threaten the viability of an established airport. The contemplated residential development immediately adjacent to a major public airport facility would not in our opinion be a compatible use.

In summary, we have serious reservations concerning the proposed Bel Marin Keys Unit IV subdivision. Public use of nearby Hamilton Air Force Base and resultant noise impacts from such use seriously limit the desirability of residential land uses in this area. On the basis of the guidelines cited above and upon our own experience with similar development proposals near other airport locations we recommend denial of the Bel Marin Keys Unit IV portion of this project.

Thank you for your consideration.

Sincerely,

Fredrick M. Isaac
FREDERICK M. ISAAC

Tr Chief, Airport District Office, SFO-600

Department of Forestry

THE RESOURCES AGENCY OF CALIFORNIA
SACRAMENTO, CALIFORNIA

California Coastal
Commission
State Coastal Conserv
California Conservat
Corps

APR 15 1977

Brigadier General Richard M. Connell
Division Engineer
South Pacific Division
U. S. Army Corps of Engineers
630 Sansome Street
San Francisco, CA 94111

Dear General Connell:

The State of California has reviewed your "Draft Environmental Statement for Marin Keys Unit IV - Ignacio Industrial Park Unit 3 Marin County, California" transmitted by Notice of Intent (SCH77022169) dated February 21, 1977 and submitted to the Office of Planning and Research (State Clearinghouse) in the Governor's Office. This review fulfills the requirements under Part II of the U. S. Office of Management and Budget Circular A-95 and the National Environmental Policy Act of 1969.

The State's review has been coordinated with the Departments of Conservation, Fish and Game, Navigation and Ocean Development, Parks and Recreation, Water Resources, Food and Agriculture, Health, and Transportation; the Air Resources Board, the Solid Waste Management Board, the State Water Resources Control Board, the San Francisco Bay Conservation and Development Commission, the Energy Resources Conservation and Development Commission, the Public Utilities Commission and the State Lands Division of the State Lands Commission.

We have the following concerns with accompanying recommendations:

Air Resources Concerns

Volume 2, page 62. "The potential for contaminant accumulation is high in the study area." It is also stated on page 62, "There may be adverse air quality impacts from industrial emissions; however, it is impossible at this time to assess the impact of industrial emissions because it is not known exactly what kinds of industries will develop in the proposed Unit 3."

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D-21

DOCUMENT D-9

The project is expected to attract light industrial and commercial facilities, but the DEIS does not define light industrial. While it may not be possible to precisely quantify emissions related to the industrial park, it is suggested that light industry needs to be more specifically defined and site specific emission levels established to help guide industrial development which is compatible with air quality needs.

This project is located in the Bay Area Air Quality Maintenance Area (AQMA) where an air quality maintenance planning (AQMP) task force team is developing a plan which will include the formulation of techniques to integrate air quality considerations into planning decisions. This planning effort, which is scheduled for completion in the fall of 1978, needs to be recognized and discussed in the EIS.

It is important to evaluate the impact of the Bel Marin Keys and Ignacio Industrial Park on future air quality, present it in the final EIS, and identify the project's compatibility with the AQMP effort.

Geologic Concerns

Geologic aspects of the proposed sites are taken into consideration; however, no subsurface supporting data are supplied; and for sites underlain by thick bay mud, such data are necessary for critical evaluation.

For example, in the third and fifth paragraphs of page 25 of "Geology for Planning, Novato Area", referred to in many places in the geological sections of these documents, it is stated that alluvial deposits in this area contain lenses of relatively clean sand that might be susceptible to liquefaction. Topographic evidence suggests one or more past liquefaction events in the valley of Pacheco Creek upstream from these sites.

Further, in Volume 1, page 15, paragraph 2.23, and elsewhere, it is noted that "The results of a geotechnical study of the Ignacio Industrial Park Unit 3 site by Cooper-Clark and Associates indicate that the underlying sandy soils are sufficiently dense or contain enough fine-grained binder soils to minimize liquefaction potential." The following sentence, however, seems to be self-contradictory, and to suggest the liquefaction potential (saturated sand beds) might be high. No supporting data are presented in the Appendices or elsewhere.

Water Quality Concerns

The discharge of pollutants from the proposed Ignacio Industrial Park parking lot as shown in Volume 1, page 33, 4.20 will enter the 119 acre wildlife area which ultimately drains into Novato Creek. The potential adverse effects of the discharge should be addressed. Mitigation measures to reduce the pollutants in the run-off should be included in the appropriate section of the final EIS.

The final EIS should discuss the impact of the Bel Marin Keys Unit IV and any proposed future housing developments in the immediate vicinity on the potential for wastewater reclamation alternatives proposed by the Novato Sanitation District. At present, the District is contemplating a wastewater disposal scheme that involves a reclamation alternative.

Fish and Wildlife Concerns

The Bel Marin Keys portion of the project raises some major environmental concerns. The fish and wildlife mitigation proposals in the report do not adequately compensate for wildlife losses associated with Unit IV development. The final environmental statement must include an adequate mitigation plan for the ultimate project.

Unit IV represents only a partial development of a much larger project. Ultimate development of all of Bel Marin Keys would permanently remove a large quantity of valuable wildlife habitat and have an adverse impact on the existing and potential fish and/or wildlife values in and around the project area.

It is suggested that the final environmental statement include a mitigation plan using the conceptual idea of tidal restoration of one acre of land for each acre of diked-off former tideland that is developed. After the applicant has restored the mitigation site to tidal action, the land could then be deeded to the State to be kept in perpetuity as a fish and wildlife area.

Highway Concerns

Traffic generated by the proposed developments will have a significant adverse effect on the Bel Marin Keys Boulevard-Navajo Drive-Route 101 off-ramp intersection, since delays and congestion are occurring at this intersection under existing traffic conditions. However, the DEIS does not provide a valid analysis of existing plus project-generated peak hour traffic at the intersection which would show the extent of the impact.

On Pages 31 and 32, Appendix B, Volume 2, reference is made to a critical lane analysis (shown in Table 12, Page 32). The critical lane analysis shown in Table 12 is different from the CALTRANS method which takes into account vehicle conflicts caused by the interaction of through and turning movements, and does not rely on the approach volumes only. Consideration of vehicle conflicts as well as approach volumes gives a much better picture of operating conditions.

The level of service data referred to in the footnote on Page 32 is based on the CALTRANS method, and, therefore, cannot be applied to the traffic volume shown in Table 12.

Belmar, General Richard B. Cornell
Page 4

The mitigation measures 1, 2 and 3, described on Pages 22 and 23, Appendix B, Volume 2, would improve traffic conditions at the Del Marín Keys Boulevard-Have Drive-Route 101 off-ramp intersection. However, a peak hour traffic analysis should be provided for each measure to show the extent of the mitigation for the total traffic shown in Table 3, Page 59, Appendix C, Volume 2, plus the Ignacio Industrial Park Unit 3 traffic.

The EIS does not take into account traffic generated by any future Del Marín Keys Units. The map on Page A-18, Volume 2 shows that existing development plus Unit IV of the Del Marín Keys is less than one-half of the total proposed development. It is our opinion that the cumulative impact of the whole development should be commented on.

Portions of State Highways 101 and 37 in the vicinity of the project are low-lying. Potential flooding is sensitive to the water stages in Novato, San Jose, and Pacheco Creeks where they cross the highway. The project proposes drainage changes such as filling, pond construction, pumping, and channel changes. The Statement should discuss the effect of these changes upon stages in the creeks at the highway crossings. This should include the cumulative effect of future projects in the area.

The DEIS indicates that traffic volumes generated by this proposed development, and other proposals which have already been approved, will exceed the capacity of the eastside of the Route 101/Ignacio Boulevard interchange. Major traffic congestion will occur if the interchange is not modified to handle the additional traffic.

A "Federal Aid Urban Program" project has been initiated, with the City, County, and State participation, which would provide for the extension of Ignacio Boulevard over the railroad to connect with Del Marín Keys Boulevard. This would also revise the eastside ramp and frontage road relationship.

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Encl. Mr. General Michael D. Connell
Page 3

This EMD project, if approved and financed, could be scheduled for construction in two to three years.

Thank you for the opportunity to review and comment.

Sincerely,

CLAIRE T. DEBRICK
Secretary for Resources

By 

L. Frank Goodson
Assistant to the Secretary
Projects Coordinator

cc: Director of Management Systems
State Clearinghouse
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814
SCH No. 77022169

DEPARTMENT OF PARKS AND RECREATION

P.O. BOX 2390
SACRAMENTO 95811

(916) 445-8006

May 6, 1977

Richard M. Connell, Brigadier General
Department of the Army
South Pacific Division, Corps of Engineers
630 Sansome Street, Room 1216
San Francisco, California 94111

Dear General Connell:

The Office of Historic Preservation has reviewed the Draft Environmental Statement for the proposed Bel Marin Keys Unit IV-Ignacio Industrial Park Unit 3 Development near the City of Novato, Marin County.

No properties on the National Register of Historic Places, California State Historical Landmarks, or State Points of Historical Interest are currently listed within the boundaries of the proposed undertaking.

In the Draft Environmental Statement, Mr. Brian Dillon's archeological assessment adequately addresses known and potential cultural resources existing within a portion of the Ignacio Industrial Park. However, since the project area is located near known ethnographic Miwok occupational village sites, I request that a qualified professional archeologist be consulted immediately if artifacts are found during construction. In addition, my staff concurs with the recommendation to relocate, rather than demolish, existing structures. As staff to the State Historic Preservation Officer, I have determined that the proposed project does not appear to be in conflict with the National Historic Preservation Act of 1966.

Please do not hesitate to contact Eugene Itogawa of my staff at (916) 322-2204 should you require assistance in this matter.

Sincerely,

Dr. Knox Mellon
Historic Preservation Coordinator

A-4/14



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX
100 CALIFORNIA STREET
SAN FRANCISCO, CALIFORNIA 94111

Project No. D-COE-K89018-CA

H. A. Flertzheim, Jr.
Colonel, CE
District Engineer
Department of the Army
Corps of Engineers
211 Main Street
San Francisco, California 94105

JUN 2 1977

Dear Colonel Flertzheim:

The Environmental Protection Agency has received and reviewed the Draft Environmental Statement for the Bel Marin Keys Unit IV - Ignacio Industrial Park Unit 3, Marin County, California.

EPA's comments on the Draft Environmental Statement have been classified as Category ER-2. Definitions of the categories are provided on the enclosure. The classification and the date of EPA's comments will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal actions under Section 309 of the Clean Air Act. Our procedure is to categorize our comments on both the environmental consequences of the proposed action and the adequacy of the environmental statement.

EPA appreciates the opportunity to comment on this Draft Environmental Statement and requests two copies of the Final Environmental Statement when available.

If you have any questions regarding our comments, please contact Patricia Sanderson Port, EIS Coordinator, at (415) 556-6266.

Sincerely,

Shirley M. Prindiville

for Paul De Falco, Jr.
Regional Administrator

Enclosure

cc: Council on Environmental Quality

Air Comments

The statements made on page 34 of the DEIS regarding air quality do not appear to be entirely accurate. Although the DEIS states that predicted CO concentrations approach the Federal Standards and other pollutant levels are below the standards, it is likely that the predicted CO is underestimated and at least the oxidant concentration currently exceeds and is expected to continue to exceed the Federal Standard in the near future.

As described in Appendix C-VIII the predicted CO calculations assume that the traffic would be moving freely at about 30 miles per hour even during the rush hours. This is unlikely even with traffic flow improvements. The "maximum consecutive 8-hour traffic" which is assumed also appears to be incorrect. It is more likely that the maximum 8-hour traffic volume is somewhat over half the daily average traffic and must be in any event, much higher than the 6-9 a.m. traffic volume which appears to have been used. In addition, it is not clear why the receptor site is so far from the road (as noted in the BAAPCD Guidelines, page A-6, potential receptor sites include residential areas). For these reasons, the predicted CO concentrations might be substantially underestimated and the project's actual impact on CO air quality might cause a violation of the Federal Standards. The FEIS must address these points and should propose mitigation if a violation is predicted.

Regarding oxidant air quality, there is no documentation in the DEIS to support the statement that the oxidant standard will be attained in the project area. On the other hand, oxidant levels currently exceed the Federal Standard throughout the San Francisco Bay Area and the area has been designated an Air Quality Maintenance Area by EPA indicating that the oxidant problem is significant and expected to continue in the future. The FEIS needs to carefully consider this oxidant problem and should propose mitigating measures to reduce or eliminate any emissions resulting from this project which might add to the problem.

The DEIS's discussion on traffic movement is confusing: first, "significant" congestion is expected as a result of this and related projects (B-31); next, road improvements "are currently scheduled" (B-33); but no local funds are budgeted for the improvements (Appendix 5) which are or were scheduled to begin in May 1977 (C-VII(3)); and it is noted that the planned improvements would not remove the congestion problem anyway (C-VII(8)). The traffic impact mitigation

potential for phased development (B-33) is questionable since "severe congestion" is expected to occur when only one-sixth of the planned developments is completed. The implication of this traffic congestion on air quality is increased emissions and worsening of the existing air quality problems (through energy waste). The FEIS needs to develop measures that would assure that the traffic congestion problem would not occur.

The discussion in the EIS regarding alternatives should be expanded. The DEIS on page C-103 indicates that a number of alternatives had been under consideration but were later eliminated. Since the purpose of an EIS is to provide information and to assure that environmental factors are included in the decision making process, this EIS needs to describe the alternatives that were considered and discuss why they should be rejected. The description should include the relative air quality impacts per alternative.

Although the DEIS briefly mentions the AQMP, the FEIS needs to include a status report as well as to how the OPR and ABAG industrial siting study will potentially affect this project. The FEIS should also indicate whether the ABAG(series 3) population projections are consistent with development in this area.

EIS CATEGORY CODES

Environmental Impact of the Action

LO--Lack of Objections

EPA has no objection to the proposed action as described in the draft impact statement; or suggests only minor changes in the proposed action.

ER--Environmental Reservations

EPA has reservations concerning the environmental effects of certain aspects of the proposed action. EPA believes that further study of suggested alternatives or modifications is required and has asked the originating Federal agency to reassess these aspects.

EU--Environmentally Unsatisfactory

EPA believes that the proposed action is unsatisfactory because of its potentially harmful effect on the environment. Furthermore, the Agency believes that the potential safeguards which might be utilized may not adequately protect the environment from hazards arising from this action. The Agency recommends that alternatives to the action be analyzed further (including the possibility of no action at all).

Adequacy of the Impact Statement

Category 1--Adequate

The draft impact statement adequately sets forth the environmental impact of the proposed project or action as well as alternatives reasonably available to the project or action.

Category 2--Insufficient Information

EPA believes that the draft impact statement does not contain sufficient information to assess fully the environmental impact of the proposed project or action. However, from the information submitted, the Agency is able to make a preliminary determination of the impact on the environment. EPA has requested that the originator provide the information that was not included in the draft statement.

Category 3--Inadequate

EPA believes that the draft impact statement does not adequately assess the environmental impact of the proposed project or action, or that the statement inadequately analyzes reasonably available alternatives. The Agency has requested more information and analysis concerning the potential environmental hazards and has asked that substantial revision be made to the impact statement.

If a draft impact statement is assigned a Category 3, no rating will be made of the project or action, since a basis does not generally exist on which to make such a determination.

**Marin County
Comprehensive
Planning
Department**

Civic Center San Rafael, California 94903 Telephone 479-1100 Donald B. Gutloff A.I.P. Director

July 7, 1977

U.S. Army Corps of Engineers
San Francisco District
630 Sansome Street, Room 1216
San Francisco, California 94111

SUBJECT: Draft Environmental Statement
Bel Marin Keys Unit IV
Ignacio Industrial Park Unit III

Gentlemen:

The Planning Department has reviewed the subject Draft Environmental Statement and have the following comments:

1. Pages 1,4 and 30 (also summary page) paragraph 1.01, 1.15 and 4.01: The sections offer different descriptions of the Bel Marin Keys Unit IV project. At present, Marin County has received application for 158 residential units on approximately 99 acres only. Commercial development is not proposed on the Unit IV project site and recent County zoning action will not permit it (see #4 below).
2. Page 20, paragraph 2.54: The Entrada Drive Fire Station is now complete and occupied. Fire protection services from this site are now available to both projects.
3. Page 23, paragraphs 2.71 and 2.72: Most noise investigations of the projects' area indicate substantially more noise impacts than noted here. See Section 4.02 and 4.61 of the subject Environmental Statement. (Reference Environmental Impact Report for Bel Marin Keys Unit IV prepared by Applied Service and Resource Planning, 1975.)
4. Page 26, paragraph 3.02: All of the project site of Unit IV is now zoned RSP-1.6 (Residential, Single-Family, Planned 1.6 dwelling units/Acre), adopted December 1976. The remainder lands noted in the report have been zoned RSP-0.5 (one dwelling unit per 2 acres).

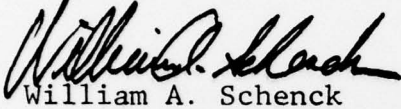
July 7, 1977

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5. Page 28, paragraph 3.13: As stated elsewhere the previous zoning of the subject property was primarily A-2 (Limited Agricultural - 1 unit/2 acres) which should not be considered "open space" zoning. The Marin Countywide Plan identifies the area as "Conservation Zone (safety)". Development is to be allowed in this zone subject to careful evaluation of the identified constraints. Specific constraints identified here are flood hazard, visual quality and marsh environment.

Generally we find the report, concise and factual and recommend its approval with the changes noted above.

Very truly yours,



William A. Schenck
Senior Planner

WAS/dp

cc: Environmental Services
Gonzalez and Oberkamper